PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : C12Q 1/68, C12N 15/11, C07K 14/22	A1	(11) International Publication Number: WO 00/66791 (43) International Publication Date: 9 November 2000 (09.11.00)

(21) International Application Number: PCT/US00/05928

(22) International Filing Date: 8 March 2000 (08.03.00)

(30) Priority Data:

60/132,068	30 April 1999 (30.04.99)	US
PCT/US99/23573	8 October 1999 (08.10.99)	US
0004695.3	28 February 2000 (28.02.00)	GB

(71) Applicants (*for all designated States except US*): CHIRON CORPORATION [US/US]; 4560 Horton Street, Emeryville, CA 94608 (US). THE INSTITUTE FOR GENOMIC RESEARCH [US/US]; 9212 Medical Center Drive, Rockville, MD 20850 (US).

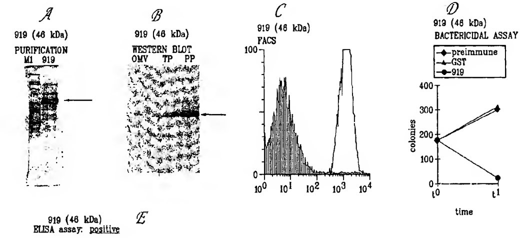
(72) Inventors; and
(75) Inventors/Applicants (*for US only*): PIZZA, Mariagrazia [IT/IT]; Chiron SpA, Via Fiorentina, 1, I-53100 Siena (IT). HICKEY, Erin [US/US]; 4569 Horton Street, Emeryville, CA 94608-2916 (US). PETERSON, Jeremy [US/US]; 4569 Horton Street, Emeryville, CA 94608-2916 (US). TETTELIN, Herve [US/US]; 4569 Horton Street, Emeryville, CA 94608-2916 (US). VENTER, J., Craig [US/US]; 4569 Horton Street, Emeryville, CA 94608-2916 (US). MASIGNANI, Vega [IT/IT]; Chiron SpA, Via Fiorentina 1, I-53100 Siena (IT). GALEOTTI, Cesira [IT/IT]; Chiron SpA, Via Fiorentina 1, I-53100 Siena (IT). MORA, Marirosa [IT/IT]; Chiron SpA, Via Fiorentina, 1, I-53100 Siena (IT). RATTI, Giulio [IT/IT]; Chiron SpA, Via Fiorentina, 1, I-53100 Siena (IT). SCARSELLI, Maria [IT/IT]; Chiron SpA, Via Fiorentina, 1, I-53100 Siena (IT). SCARLATO, Vincenzo [IT/IT]; Chiron SpA, Via Fiorentina 1, I-53100 Siena (IT). RAPPUOLI, Rino [IT/IT]; Chiron SpA, Via Fiorentina 1, I-53100 Siena (IT). FRAZER, Claire, M. [US/US]; 4560 Horton Street, Emeryville, CA 94608 (US). GRANDI, Guido [IT/IT]; Chiron SpA, Via Fiorentina, 1, I-53100 Siena (IT).

(74) Agent: HARBIN, Alisa, A.; Chiron Corporation, Intellectual Property – R440, P.O. Box 8097, Emeryville, CA 94662-8097 (US).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: NEISSERIA GENOMIC SEQUENCES AND METHODS OF THEIR USE



(57) Abstract

The invention provides methods of obtaining immunogenic proteins from genomic sequences including *Neisseria*, including the amino acid sequences and the corresponding nucleotide sequences, as well as the genomic sequence of *Neisseria meningitidis B*. The proteins so obtained are useful antigens for vaccines, immunogenic compositions, and/or diagnostics.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

NEISSERIA GENOMIC SEQUENCES AND METHODS OF THEIR USE

This application claims priority to provisional U.S. application serial no. 60/132,068, filed 30 April 1999; PCT/US99/23573, filed 8 October 1999 (to be published April 2000); and Great Britain application serial no. GB-0004695.3, filed 28 February 2000.

This invention relates to methods of obtaining antigens and immunogens, the antigens and immunogens so obtained, and nucleic acids from the bacterial species: *Neisseria meningitidis*. In particular, it relates to genomic sequences from the bacterium; more particularly its "B" serogroup.

BACKGROUND

Neisseria meningitidis is a non-motile, gram negative diplococcus human pathogen. It colonizes the pharynx, causing meningitis and, occasionally, septicaemia in the absence of meningitis. It is closely related to *N. gonorrhoea*, although one feature that clearly differentiates meningococcus from gonococcus is the presence of a polysaccharide capsule that is present in all pathogenic meningococci.

N. meningitidis causes both endemic and epidemic disease. In the United States the attack rate is 0.6-1 per 100,000 persons per year, and it can be much greater during outbreaks. (see Lieberman *et al.* (1996) Safety and Immunogenicity of a Serogroups A/C *Neisseria meningitidis* Oligosaccharide-Protein Conjugate Vaccine in Young Children. *JAMA* 275(19):1499-1503; Schuchat *et al* (1997) Bacterial Meningitis in the United States in 1995. *N Engl J Med* 337(14):970-976). In developing countries, endemic disease rates are much higher and during epidemics incidence rates can reach 500 cases per 100,000 persons per year. Mortality is extremely high, at 10-20% in the United States, and much higher in developing countries. Following the introduction of the conjugate vaccine against *Haemophilus influenzae*, *N. meningitidis* is the major cause of bacterial meningitis at all ages in the United States (Schuchat *et al* (1997) *supra*).

Based on the organism's capsular polysaccharide, 12 serogroups of *N. meningitidis* have been identified. Group A is the pathogen most often implicated in epidemic disease in sub-Saharan Africa. Serogroups B and C are responsible for the vast majority of cases in the

United States and in most developed countries. Serogroups W135 and Y are responsible for the rest of the cases in the United States and developed countries. The meningococcal vaccine currently in use is a tetravalent polysaccharide vaccine composed of serogroups A, C, Y and W135. Although efficacious in adolescents and adults, it induces a poor immune response and short duration of protection, and cannot be used in infants (e.g., Morbidity and Mortality weekly report, Vol. 46, No. RR-5 (1997)). This is because polysaccharides are T-cell independent antigens that induce a weak immune response that cannot be boosted by repeated immunization. Following the success of the vaccination against *H. influenzae*, conjugate vaccines against serogroups A and C have been developed and are at the final stage of clinical testing (Zollinger WD "New and Improved Vaccines Against Meningococcal Disease". In: *New Generation Vaccines*, *supra*, pp. 469-488; Lieberman *et al* (1996) *supra*; Costantino *et al* (1992) Development and phase I clinical testing of a conjugate vaccine against meningococcus A (menA) and C (menC) (*Vaccine* 10:691-698)).

Meningococcus B (MenB) remains a problem, however. This serotype currently is responsible for approximately 50% of total meningitis in the United States, Europe, and South America. The polysaccharide approach cannot be used because the MenB capsular polysaccharide is a polymer of α(2-8)-linked *N*-acetyl neuraminic acid that is also present in mammalian tissue. This results in tolerance to the antigen; indeed, if an immune response were elicited, it would be anti-self, and therefore undesirable. In order to avoid induction of autoimmunity and to induce a protective immune response, the capsular polysaccharide has, for instance, been chemically modified substituting the *N*-acetyl groups with *N*-propionyl groups, leaving the specific antigenicity unaltered (Romero & Outschoorn (1994) Current status of Meningococcal group B vaccine candidates: capsular or non-capsular? *Clin Microbiol Rev* 7(4):559-575).

Alternative approaches to MenB vaccines have used complex mixtures of outer membrane proteins (OMPs), containing either the OMPs alone, or OMPs enriched in porins, or deleted of the class 4 OMPs that are believed to induce antibodies that block bactericidal activity. This approach produces vaccines that are not well characterized. They are able to protect against the homologous strain, but are not effective at large where there are many antigenic variants of the outer membrane proteins. To overcome the antigenic variability, multivalent vaccines containing up to nine different porins have been constructed (e.g.,

Poolman JT (1992) Development of a meningococcal vaccine. *Infect. Agents Dis.* 4:13-28). Additional proteins to be used in outer membrane vaccines have been the opa and opc proteins, but none of these approaches have been able to overcome the antigenic variability (e.g., Ala'Aldeen & Borriello (1996) The meningococcal transferrin-binding proteins 1 and 2 are both surface exposed and generate bactericidal antibodies capable of killing homologous and heterologous strains. *Vaccine* 14(1):49-53).

A certain amount of sequence data is available for meningococcal and gonococcal genes and proteins (e.g., EP-A-0467714, WO96/29412), but this is by no means complete. The provision of further sequences could provide an opportunity to identify secreted or surface-exposed proteins that are presumed targets for the immune system and which are not antigenically variable or at least are more antigenically conserved than other and more variable regions. Thus, those antigenic sequences that are more highly conserved are preferred sequences. Those sequences specific to *Neisseria meningitidis* or *Neisseria gonorrhoeae* that are more highly conserved are further preferred sequences. For instance, some of the identified proteins could be components of efficacious vaccines against meningococcus B, some could be components of vaccines against all meningococcal serotypes, and others could be components of vaccines against all pathogenic *Neisseriae.* The identification of sequences from the bacterium will also facilitate the production of biological probes, particularly organism-specific probes.

It is thus an object of the invention is to provide Neisserial DNA sequences which (1) encode proteins predicted and/or shown to be antigenic or immunogenic, (2) can be used as probes or amplification primers, and (3) can be analyzed by bioinformatics.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 illustrates the products of protein expression and purification of the predicted ORF 919 as cloned and expressed in *E. coli.*

Fig. 2 illustrates the products of protein expression and purification of the predicted ORF 279 as cloned and expressed in *E. coli.*

Fig. 3 illustrates the products of protein expression and purification of the predicted ORF 576-1 as cloned and expressed in *E. coli.*

Fig. 4 illustrates the products of protein expression and purification of the predicted ORF 519-1 as cloned and expressed in *E. coli.*

Fig. 5 illustrates the products of protein expression and purification of the predicted ORF 121-1 as cloned and expressed in *E. coli.*

Fig. 6 illustrates the products of protein expression and purification of the predicted ORF 128-1 as cloned and expressed in *E. coli.*

Fig. 7 illustrates the products of protein expression and purification of the predicted ORF 206 as cloned and expressed in *E. coli.*

Fig. 8 illustrates the products of protein expression and purification of the predicted ORF 287 as cloned and expressed in *E. coli.*

Fig. 9 illustrates the products of protein expression and purification of the predicted ORF 406 as cloned and expressed in *E. coli.*

Fig. 10 illustrates the hydrophilicity plot, antigenic index and AMPHI regions of the products of protein expression the predicted ORF 919 as cloned and expressed in *E. coli.*

Fig. 11 illustrates the hydrophilicity plot, antigenic index and AMPHI regions of the products of protein expression the predicted ORF 279 as cloned and expressed in *E. coli.*

Fig. 12 illustrates the hydrophilicity plot, antigenic index and AMPHI regions of the products of protein expression the predicted ORF 576-1 as cloned and expressed in *E. coli.*

Fig. 13 illustrates the hydrophilicity plot, antigenic index and AMPHI regions of the products of protein expression the predicted ORF 519-1 as cloned and expressed in *E. coli.*

Fig. 14 illustrates the hydrophilicity plot, antigenic index and AMPHI regions of the products of protein expression the predicted ORF 121-1 as cloned and expressed in *E. coli.*

Fig. 15 illustrates thc hydrophilicity plot, antigenic index and AMPHI regions of the products of protein expression the predicted ORF 128-1 as cloned and expressed in *E. coli.*

Fig. 16 illustrates the hydrophilicity plot, antigenic index and AMPHI regions of the products of protein expression the predicted ORF 206 as cloned and expressed in *E. coli.*

Fig. 17 illustrates the hydrophilicity plot, antigenic index and AMPHI regions of the products of protein expression the predicted ORF 287 as cloned and expressed in *E. coli.*

Fig. 18 illustrates the hydrophilicity plot, antigenic index and AMPHI regions of the products of protein expression the predicted ORF 406 as cloned and expressed in *E. coli.*

THE INVENTION

The first complete sequence of the genome of *N. meningitidis* was disclosed as 961 partial contiguous nucleotide sequences, shown as SEQ ID NOs:1-961 of co-owned PCT/US99/23573 (the '573 application), filed 8 October 1999 (to be published April 2000). A single sequence full length genome of *N. meningitidis* was also disclosed as SEQ ID NO. 1068 of the '573 application. The invention is based on a full length genome of *N. meningitidis* which appears as SEQ ID NO. 1 in the present application as Appendix A hereto. The 961 sequences of the '573 application represent substantially the whole genome of serotype B of *N. meningitidis* (>99.98%). There is partial overlap between some of the 961 contiguous sequences ("contigs") shown in the 961 sequences, which overlap was used to construct the single full length sequence shown in SEQ ID NO. 1 in Appendix A hereto, using the TIGR Assembler [G.S. Sutton et al., *TIGR Assembler: A New Tool for Assembling Large Shotgun Sequencing Projects*, Genome Science and Technology, 1:9-19 (1995)]. Somc of the nucleotides in the contigs had been previously released. (See ftp:11ftp.tigr.org/pub/data/n_meningitidis on the world-wide web or "WWW"). The coordinates of the 2508 released sequences in the present contigs are presented in Appendix A of the '573 application. These data include the contig number (or i.d.) as presented in the first column; the name of the sequence as found on WWW is in the second column; with the coordinates of the contigs in the third and fourth columns, respectively. The sequences of certain MenB ORFs presented in Appendix B of the '573 application feature in International Patent Application filed by Chiron SpA on October 9, 1998 (PCT/IB98/01665) and January 14, 1999 (PCT/IB99/00103) respectively. Appendix B hereto provides a listing of 2158 open reading frames contained within the full length sequence found in SEQ ID NO. 1 in Appendix A hereto. The information set forth in Appendix B hereto includes the "NMB" name of the sequence, the putative translation product, and the beginning and ending nucleotide positions within SEQ ID NO. 1 which comprise the open reading frames. These open reading frames are referred to herein as the "NMB open reading frames".

In a first aspect, the invention provides nucleic acid including the *N. meningitidis* nucleotide sequence shown in SEQ ID NO. 1 in Appendix A hereto. It also provides nucleic acid comprising sequences having sequence identity to the nucleotide sequence disclosed herein. Depending on the particular sequence, the degree of sequence identity is preferably

greater than 50% (e.g., 60%, 70%, 80%, 90%, 95%, 99% or more). These sequences include, for instance, mutants and allelic variants. The degree of sequence identity cited herein is determined across the length of the sequence determined by the Smith-Waterman homology search algorithm as implemented in MPSRCH program (Oxford Molecular) using an affine gap search with the following parameters: gap open penalty 12, gap extension penalty 1.

The invention also provides nucleic acid including a fragment of one or more of the nucleotide sequences set out herein, including the NMB open reading frames shown in Appendix B hereto. The fragment should comprise at least *n* consecutive nucleotides from the sequences and, depending on the particular sequence, *n* is 10 or more (e.g., 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 30, 35, 40, 45, 50, 60, 75, 100 or more). Preferably, the fragment is unique to the genome of *N. meningitidis*, that is to say it is not present in the genome of another organism. More preferably, the fragment is unique to the genome of strain B of *N. meningitidis*. The invention also provides nucleic acid that hybridizes to those provided herein. Conditions for hybridizing are disclosed herein.

The invention also provides nucleic acid including sequences complementary to those described above (e.g., for antisense, for probes, or for amplification primers).

Nucleic acid according to the invention can, of course, be prepared in many ways (e.g., by chemical synthesis, from DNA libraries, from the organism itself, etc.) and can take various forms (e.g., single-stranded, double-stranded, vectors, probes, primers, etc.). The term "nucleic acid" includes DNA and RNA, and also their analogs, such as those containing modified backbones, and also peptide nucleic acid (PNA) etc.

It will be appreciated that, as SEQ ID NOs:1-961 of the '573 application represent the substantially complete genome of the organism, with partial overlap, references to SEQ ID NOs:1-961 of the '573 application include within their scope references to the complete genomic sequence, that is, SEQ ID NO. 1 hereof. For example, where two SEQ ID NOs overlap, the invention encompasses the single sequence which is formed by assembling the two overlapping sequences, which full sequence will be found in SEQ ID NO. 1 hereof. Thus, for instance, a nucleotide sequence which bridges two SEQ ID NOs but is not present in its entirety in either SEQ ID NO is still within the scope of the invention. Such a sequence will be present in its entirety in the single full length sequence of SEQ ID NO. 1 of the present application.

The invention also provides vectors including nucleotide sequences of the invention (e.g., expression vectors, sequencing vectors, cloning vectors, etc.) and host cells transformed with such vectors.

According to a further aspect, the invention provides a protein including an amino acid sequence encoded within a *N. meningitidis* nucleotide sequence set out herein. It also provides proteins comprising sequences having sequence identity to those proteins. Depending on the particular sequence, the degree of sequence identity is preferably greater than 50% (e.g., 60%, 70%, 80%, 90%, 95%, 99% or more). Sequence identity is determined as above disclosed. These homologous proteins include mutants and allelic variants, encoded within the *N. meningitidis* nucleotide sequence set out herein.

The invention further provides proteins including fragments of an amino acid sequence encoded within a *N. meningitidis* nucleotide sequence set out in the sequence listing. The fragments should comprise at least *n* consecutive amino acids from the sequences and, depending on the particular sequence, *n* is 7 or more (e.g., 8, 10, 12, 14, 16, 18, 20 or more). Preferably the fragments comprise an epitope from the sequence.

The proteins of the invention can, of course, be prepared by various means (e.g., recombinant expression, purification from cell culture, chemical synthesis, *etc.*) and in various forms (e.g. native, fusions *etc.*). They are preferably prepared in substantially isolated form (*i.e.*, substantially free from other *N. meningitidis* host cell proteins).

Various tests can be used to assess the *in vivo* immunogenicity of the proteins of the invention. For example, the proteins can be expressed recombinantly or chemically synthesized and used to screen patient sera by immunoblot. A positive reaction between the protein and patient serum indicates that the patient has previously mounted an immune response to the protein in question; i.e., the protein is an immunogen. This method can also be used to identify immunodominant proteins.

The invention also provides nucleic acid encoding a protein of the invention.

In a further aspect, the invention provides a computer, a computer memory, a computer storage medium (e.g., floppy disk, fixed disk, CD-ROM, etc.), and/or a computer database containing the nucleotide sequence of nucleic acid according to the invention. Preferably, it contains one or more of the *N. meningitidis* nucleotide sequences set out herein.

This may be used in the analysis of the *N. meningitidis* nucleotide sequences set out herein. For instance, it may be used in a search to identify open reading frames (ORFs) or coding sequences within the sequences.

In a further aspect, the invention provides a method for identifying an amino acid sequence, comprising the step of searching for putative open reading frames or protein-coding sequences within a *N. meningitidis* nucleotide sequence set out herein. Similarly, the invention provides the use of a *N. meningitidis* nucleotide sequence set out herein in a search for putative open reading frames or protein-coding sequences.

Open-reading frame or protein-coding sequence analysis is generally performed on a computer using standard bioinformatic techniques. Typical algorithms or program used in the analysis include ORFFINDER (NCBI), GENMARK [Borodovsky & McIninch (1993) *Computers Chem* 17:122-133], and GLIMMER [Salzberg et al. (1998) *Nucl Acids Res* 26:544-548].

A search for an open reading frame or protein-coding sequence may comprise the steps of searching a *N. meningitidis* nucleotide sequence set out herein for an initiation codon and searching the upstream sequence for an in-frame termination codon. The intervening codons represent a putative protein-coding sequence. Typically, all six possible reading frames of a sequence will be searched.

An amino acid sequence identified in this way can be expressed using any suitable system to give a protein. This protein can be used to raise antibodies which recognize epitopes within the identified amino acid sequence. These antibodies can be used to screen *N. meningitidis* to detect the presence of a protein comprising the identified amino acid sequence.

Furthermore, once an ORF or protein-coding sequence is identified, the sequence can be compared with sequence databases. Sequence analysis tools can be found at NCBI (http://www.ncbi.nlm.nih.gov) e.g., the algorithms BLAST, BLAST2, BLASTn, BLASTp, tBLASTn, BLASTx, & tBLASTx [see also Altschul *et al.* (1997) Gapped BLAST and PSI-BLAST: new generation of protein database search programs. *Nucleic Acids Research* 25:2289-3402]. Suitable databases for comparison include the nonredundant GenBank, EMBL, DDBJ and PDB sequences, and the nonredundant GenBank CDS translations, PDB,

SwissProt, Spupdate and PIR sequences. This comparison may give an indication of the function of a protein.

Hydrophobic domains in an amino acid sequence can be predicted using algorithms such as those based on the statistical studies of Esposti *et al.* [Critical evaluation of the hydropathy of membrane proteins (1990) *Eur J Biochem* 190:207-219]. Hydrophobic domains represent potential transmembrane regions or hydrophobic leader sequences, which suggest that the proteins may be secreted or be surface-located. These properties are typically representative of good immunogens.

Similarly, transmembrane domains or leader sequences can be predicted using the PSORT algorithm (http://www.psort.nibb.ac.jp), and functional domains can be predicted using the MOTIFS program (GCG Wisconsin & PROSITE).

The invention also provides nucleic acid including an open reading frame or protein-coding sequence present in a *N. meningitidis* nucleotide sequence set out herein. Furthermore, the invention provides a protein including the amino acid sequence encoded by this open reading frame or protein-coding sequence.

According to a further aspect, the invention provides antibodies which bind to these proteins. These may be polyclonal or monoclonal and may be produced by any suitable means known to those skilled in the art.

The antibodies of the invention can be used in a variety of ways, e.g., for confirmation that a protein is expressed, or to confirm where a protein is expressed. Labeled antibody (e.g., fluorescent labeling for FACS) can be incubated with intact bacteria and the presence of label on the bacterial surface confirms the location of the protein, for instance.

According to a further aspect, the invention provides compositions including protein, antibody, and/or nucleic acid according to the invention. These compositions may be suitable as vaccines, as immunogenic compositions, or as diagnostic reagents.

The invention also provides nucleic acid, protein, or antibody according to the invention for use as medicaments (e.g., as vaccines) or as diagnostic reagents. It also provides the use of nucleic acid, protein, or antibody according to the invention in the manufacture of (I) a medicament for treating or preventing infection due to Neisserial bacteria (ii) a diagnostic reagent for detecting the presence of Neisserial bacteria or of antibodies raised against Neisserial bacteria. Said Neisserial bacteria may be any species or

strain (such as *N. gonorrhoeae*) but are preferably *N. meningitidis*, especially strain A, strain B or strain C.

In still yet another aspect, the present invention provides for compositions including proteins, nucleic acid molecules, or antibodies. More preferable aspects of the present invention are drawn to immunogenic compositions of proteins. Further preferable aspects of the present invention contemplate pharmaceutical immunogenic compositions of proteins or vaccines and the use thereof in the manufacture of a medicament for the treatment or prevention of infection due to Neisserial bacteria, preferably infection of MenB.

The invention also provides a method of treating a patient, comprising administering to the patient a therapeutically effective amount of nucleic acid, protein, and/or antibody according to the invention.

According to further aspects, the invention provides various processes.

A process for producing proteins of the invention is provided, comprising the step of culturing a host cell according to the invention under conditions which induce protein expression. A process which may further include chemical synthcsis of proteins and/or chemical synthesis (at least in part) of nucleotides.

A process for detecting polynucleotides of the invention is provided, comprising the steps of: (a) contacting a nucleic probe according to the invention with a biological sample under hybridizing conditions to form duplexes; and (b) detecting said duplexes.

A process for detecting proteins of the invention is provided, comprising the steps of: (a) contacting an antibody according to the invention with a biological sample under conditions suitable for the formation of an antibody-antigen complexes; and (b) detecting said complexes.

Another aspect of the present invention provides for a process for detecting antibodies that selectably bind to antigens or polypeptides or proteins specific to any species or strain of Neisserial bacteria and preferably to strains of *N. gonorrhoeae* but more preferably to strains of *N. meningitidis*, especially strain A, strain B or strain C, more preferably MenB, where the process comprises the steps of: (a) contacting antigen or polypeptide or protein according to the invention with a biological sample under conditions suitable for the formation of an antibody-antigen complexes; and (b) detecting said complexes.

Having now generally described the invention, the same will be more readily understood through reference to the following examples which are provided by way of illustration, and are not intended to be limiting of the present invention, unless specified.

Methodology - Summary of standard procedures and techniques.

General

This invention provides *Neisseria meningitidis* MenB nucleotide sequences, amino acid sequences encoded therein. With these disclosed sequences, nucleic acid probe assays and expression cassettes and vectors can be produced. The proteins can also be chemically synthesized. The expression vectors can be transformed into host cells to produce proteins. The purified or isolated polypeptides can be used to produce antibodies to detect MenB proteins. Also, the host cells or extracts can be utilized for biological assays to isolate agonists or antagonists. In addition, with these sequences one can search to identify open reading frames and identify amino acid sequences. The proteins may also be used in immunogenic compositions and as vaccine components.

The practice of the present invention will employ, unless otherwise indicated, conventional techniques of molecular biology, microbiology, recombinant DNA, and immunology, which are within the skill of the art. Such techniques are explained fully in the literature e.g., Sambrook *Molecular Cloning; A Laboratory Manual, Second Edition* (1989); *DNA Cloning, Volumes I and ii* (D.N Glover ed. 1985); *Oligonucleotide Synthesis* (M.J. Gait ed, 1984); *Nucleic Acid Hybridization* (B.D. Hames & S.J. Higgins eds. 1984); *Transcription and Translation* (B.D. Hames & S.J. Higgins eds. 1984); *Animal Cell Culture* (R.I. Freshney ed. 1986); *Immobilized Cells and Enzymes* (IRL Press, 1986); B. Perbal, *A Practical Guide to Molecular Cloning* (1984); the *Methods in Enzymology* series (Academic Press, Inc.), especially volumes 154 & 155; *Gene Transfer Vectors for Mammalian Cells* (J.H. Miller and M.P. Calos eds. 1987, Cold Spring Harbor Laboratory); Mayer and Walker, eds. (1987), *Immunochemical Methods in Cell and Molecular Biology* (Academic Press, London); Scopes, (1987) *Protein Purification: Principles and Practice*, Second Edition (Springer-Verlag, N.Y.), and *Handbook of Experimental Immunology, Volumes I-IV* (D.M. Weir and C.C. Blackwell eds 1986).

Standard abbreviations for nucleotides and amino acids are used in this specification.

All publications, patents, and patent applications cited herein are incorporated in full by reference.

Expression systems

The *Neisseria* MenB nucleotide sequences can be expressed in a variety of different expression systems; for example those used with mammalian cells, plant cells, baculoviruses, bacteria, and yeast.

i. Mammalian Systems

Mammalian expression systems are known in the art. A mammalian promoter is any DNA sequence capable of binding mammalian RNA polymerase and initiating the downstream (3') transcription of a coding sequence (e.g., structural gene) into mRNA. A promoter will have a transcription initiating region, which is usually placed proximal to the 5' end of the coding sequence, and a TATA box, usually located 25-30 base pairs (bp) upstream of the transcription initiation site. The TATA box is thought to direct RNA polymerase II to begin RNA synthesis at the correct site. A mammalian promoter will also contain an upstream promoter element, usually located within 100 to 200 bp upstream of the TATA box. An upstream promoter element determines the rate at which transcription is initiated and can act in either orientation (Sambrook et al. (1989) "Expression of Cloned Genes in Mammalian Cells." In *Molecular Cloning: A Laboratory Manual, 2nd ed.).*

Mammalian viral genes are often highly expressed and have a broad host range; therefore sequences encoding mammalian viral genes provide particularly useful promoter sequences. Examples include the SV40 early promoter, mouse mammary tumor virus LTR promoter, adenovirus major late promoter (Ad MLP), and herpes simplex virus promoter. In addition, sequences derived from non-viral genes, such as the murine metallothionein gene, also provide useful promoter sequences. Expression may be either constitutive or regulated (inducible). Depending on the promoter selected, many promotes may be inducible using known substrates, such as the use of the mouse mammary tumor virus (MMTV) promoter with the glucocorticoid responsive element (GRE) that is induced by glucocorticoid in hormone-responsive transformed cells (see for example, U.S. Patent 5,783,681).

The presence of an enhancer element (enhancer), combined with the promoter elements described above, will usually increase expression levels. An enhancer is a regulatory DNA sequence that can stimulate transcription up to 1000-fold when linked to homologous or heterologous promoters, with synthesis beginning at the normal RNA start site. Enhancers are also active when they are placed upstream or downstream from the transcription initiation site, in either normal or flipped orientation, or at a distance of more than 1000 nucleotides from the promoter (Maniatis et al. (1987) *Science 236:*1237; Alberts et al. (1989) *Molecular Biology of the Cell*, 2nd ed.). Enhancer elements derived from viruses may be particularly useful, because they usually have a broader host range. Examples include the SV40 early gene enhancer (Dijkema et al (1985) *EMBO J. 4*:761) and the enhancer/promoters derived from the long terminal repeat (LTR) of the Rous Sarcoma Virus (Gorman et al. (1982b) *Proc. Natl. Acad. Sci. 79*:6777) and from human cytomegalovirus (Boshart et al. (1985) *Cell 41*:521). Additionally, some enhancers are regulatable and become active only in the presence of an inducer, such as a hormone or metal ion (Sassone-Corsi and Borelli (1986) *Trends Genet. 2*:215; Maniatis et al. (1987) Science 236:1237).

A DNA molecule may be expressed intracellularly in mammalian cells. A promoter sequence may be directly linked with the DNA molecule, in which case the first amino acid at the N-terminus of the recombinant protein will always be a methionine, which is encoded by the ATG start codon. If desired, the N-terminus may be cleaved from the protein by *in vitro* incubation with cyanogen bromide.

Alternatively, foreign proteins can also be secreted from the cell into the growth media by creating chimeric DNA molecules that encode a fusion protein comprised of a leader sequence fragment that provides for secretion of the foreign protein in mammalian cells. Preferably, there are processing sites encoded between the leader fragment and the foreign gene that can be cleaved either *in vivo* or *in vitro*. The leader sequence fragment usually encodes a signal peptide comprised of hydrophobic amino acids which direct the secretion of the protein from the cell. The adenovirus tripartite leader is an example of a leader sequence that provides for secretion of a foreign protein in mammalian cells.

Usually, transcription termination and polyadenylation sequences recognized by mammalian cells are regulatory regions located 3' to the translation stop codon and thus, together with the promoter elements, flank the coding sequence. The 3' terminus of the

mature mRNA is formed by site-specific post-transcriptional cleavage and polyadenylation (Birnstiel et al. (1985) *Cell 41*:349; Proudfoot and Whitelaw (1988) "Termination and 3' end processing of eukaryotic RNA. In *Transcription and splicing* (ed. B.D. Hames and D.M. Glover); Proudfoot (1989) *Trends Biochem. Sci. 14*:105). These sequences direct the transcription of an mRNA which can be translated into the polypeptide encoded by the DNA. Examples of transcription terminator/polyadenylation signals include those derived from SV40 (Sambrook et al (1989) "Expression of cloned genes in cultured mammalian cells." In *Molecular Cloning: A Laboratory Manual*).

Usually, the above-described components, comprising a promoter, polyadenylation signal, and transcription termination sequence are put together into expression constructs. Enhancers, introns with functional splice donor and acceptor sites, and leader sequences may also be included in an expression construct, if desired. Expression constructs are often maintained in a replicon, such as an extrachromosomal element (e.g., plasmids) capable of stable maintenance in a host, such as mammalian cells or bacteria. Mammalian replication systems include those derived from animal viruses, which require trans-acting factors to replicate. For example, plasmids containing the replication systems of papovaviruses, such as SV40 (Gluzman (1981) *Cell 23*:175) or polyomavirus, replicate to extremely high copy number in the presence of the appropriate viral T antigen. Additional examples of mammalian replicons include those derived from bovine papillomavirus and Epstein-Barr virus. Additionally, the replicon may have two replication systems, thus allowing it to be maintained, for example, in mammalian cells for expression and in a prokaryotic host for cloning and amplification. Examples of such mammalian-bacteria shuttle vectors include pMT2 (Kaufman et al. (1989) *Mol. Cell. Biol. 9*:946) and pHEBO (Shimizu et al. (1986) *Mol. Cell. Biol. 6*:1074).

The transformation procedure used depends upon the host to be transformed. Methods for introduction of heterologous polynucleotides into mammalian cells are known in the art and include dextran-mediated transfection, calcium phosphate precipitation, polybrene mediated transfection, protoplast fusion, electroporation, encapsulation of the polynucleotide(s) in liposomes, and direct microinjection of the DNA into nuclei.

Mammalian cell lines available as hosts for expression are known in the art and include many immortalized cell lines available from the American Type Culture Collection

(ATCC), including but not limited to, Chinese hamster ovary (CHO) cells, HeLa cells, baby hamster kidney (BHK) cells, monkey kidney cells (COS), human hepatocellular carcinoma cells (e.g., Hep G2), and a number of other cell lines.

ii. Plant Cellular Expression Systems

There are many plant cell culture and whole plant genetic expression systems known in the art. Exemplary plant cellular genetic expression systems include those described in patents, such as: U.S. 5,693,506; US 5,659,122; and US 5,608,143. Additional examples of genetic expression in plant cell culture has been described by Zenk, *Phytochemistry* 30:3861-3863 (1991). Descriptions of plant protein signal peptides may be found in addition to the references described above in Vaulcombe et al., *Mol. Gen. Genet.* 209:33-40 (1987); Chandler et al., *Plant Molecular Biology* 3:407-418 (1984); Rogers, *J. Biol. Chem.* 260:3731-3738 (1985); Rothstein et al., *Gene* 55:353-356 (1987); Whittier et al., Nucleic Acids Research 15:2515-2535 (1987); Wirsel et al., *Molecular Microbiology* 3:3-14 (1989); Yu et al., *Gene* 122:247-253 (1992). A description of the regulation of plant gene expression by the phytohormone, gibberellic acid and secreted enzymes induced by gibberellic acid can be found in R.L. Jones and J. MacMillin, Gibberellins: in: *Advanced Plant Physiology*,. Malcolm B. Wilkins, ed., 1984 Pitman Publishing Limited, London, pp. 21-52. References that describe other metabolically-regulated genes: Sheen, *Plant Cell*, 2:1027-1038(1990); Maas et al., *EMBO J.* 9:3447-3452 (1990); Benkel and Hickey, *Proc. Natl. Acad. Sci.* 84:1337-1339 (1987)

Typically, using techniques known in the art, a desired polynucleotide sequence is inserted into an expression cassette comprising genetic regulatory elements designed for operation in plants. The expression cassette is inserted into a desired expression vector with companion sequences upstream and downstream from the expression cassette suitable for expression in a plant host. The companion sequences will be of plasmid or viral origin and provide necessary characteristics to the vector to permit the vectors to move DNA from an original cloning host, such as bacteria, to the desired plant host. The basic bacterial/plant vector construct will preferably provide a broad host range prokaryote replication origin; a prokaryote selectable marker; and, for Agrobacterium transformations, T DNA sequences for Agrobacterium-mediated transfer to plant chromosomes. Where the heterologous gene is not

readily amenable to detection, the construct will preferably also have a selectable marker gene suitable for determining if a plant cell has been transformed. A general review of suitable markers, for example for the members of the grass family, is found in Wilmink and Dons, 1993, *Plant Mol. Biol. Reptr*, 11(2):165-185.

Sequences suitable for permitting integration of the heterologous sequence into the plant genome are also recommended. These might include transposon sequences and the like for homologous recombination as well as Ti sequences which permit random insertion of a heterologous expression cassette into a plant genome. Suitable prokaryote selectable markers include resistance toward antibiotics such as ampicillin or tetracycline. Other DNA sequences encoding additional functions may also be present in the vector, as is known in the art.

The nucleic acid molecules of the subject invention may be included into an expression cassette for expression of the protein(s) of interest. Usually, there will be only one expression cassette, although two or more are feasible. The recombinant expression cassette will contain in addition to the heterologous protein encoding sequence the following elements, a promoter region, plant 5' untranslated sequences, initiation codon depending upon whether or not the structural gene comes equipped with one, and a transcription and translation termination sequence. Unique restriction enzyme sites at the 5' and 3' ends of the cassette allow for easy insertion into a pre-existing vector.

A heterologous coding sequence may be for any protein relating to the present invention. The sequence encoding the protein of interest will encode a signal peptide which allows processing and translocation of the protein, as appropriate, and will usually lack any sequence which might result in the binding of the desired protein of the invention to a membrane. Since, for the most part, the transcriptional initiation region will be for a gene which is expressed and translocated during germination, by employing the signal peptide which provides for translocation, one may also provide for translocation of the protein of interest. In this way, the protein(s) of interest will be translocated from the cells in which they are expressed and may be efficiently harvested. Typically secretion in seeds are across the aleurone or scutellar epithelium layer into the endosperm of the seed. While it is not required that the protein be secreted from the cells in which the protein is produced, this facilitates the isolation and purification of the recombinant protein.

Since the ultimate expression of the desired gene product will be in a eucaryotic cell it is desirable to determine whether any portion of the cloned gene contains sequences which will be processed out as introns by the host's splicosome machinery. If so, site-directed mutagenesis of the "intron" region may be conducted to prevent losing a portion of the genetic message as a false intron code, Reed and Maniatis, *Cell* 41:95-105, 1985.

The vector can be microinjected directly into plant cells by use of micropipettes to mechanically transfer the recombinant DNA. Crossway, *Mol. Gen. Genet*, 202:179-185, 1985. The genetic material may also be transferred into the plant cell by using polyethylene glycol, Krens, et al., *Nature*, 296, 72-74, 1982. Another method of introduction of nucleic acid segments is high velocity ballistic penetration by small particles with the nucleic acid either within the matrix of small beads or particles, or on the surface, Klein, et al., *Nature*, 327, 70-73, 1987 and Knudsen and Muller, 1991, *Planta*, 185:330-336 teaching particle bombardment of barley endosperm to create transgenic barley. Yet another method of introduction would be fusion of protoplasts with other entities, either minicells, cells, lysosomes or other fusible lipid-surfaced bodies, Fraley, et al., *Proc. Natl. Acad. Sci. USA*, 79, 1859-1863, 1982.

The vector may also be introduced into the plant cells by electroporation. (Fromm et al., *Proc. Natl Acad. Sci. USA* 82:5824, 1985). In this technique, plant protoplasts are electroporated in the presence of plasmids containing the gene construct. Electrical impulses of high field strength reversibly permeabilize biomembranes allowing the introduction of the plasmids. Electroporated plant protoplasts reform the cell wall, divide, and form plant callus.

All plants from which protoplasts can be isolated and cultured to give whole regenerated plants can be transformed by the present invention so that whole plants are recovered which contain the transferred gene. It is known that practically all plants can be regenerated from cultured cells or tissues, including but not limited to all major species of sugarcane, sugar beet, cotton, fruit and other trees, legumes and vegetables. Some suitable plants include, for example, species from the genera *Fragaria, Lotus, Medicago, Onobrychis, Trifolium, Trigonella, Vigna, Citrus, Linum, Geranium, Manihot, Daucus, Arabidopsis, Brassica, Raphanus, Sinapis, Atropa, Capsicum, Datura, Hyoscyamus, Lycopersion, Nicotiana, Solanum, Petunia, Digitalis, Majorana, Cichorium, Helianthus, Lactuca, Bromus, Asparagus, Antirrhinum, Hererocallis, Nemesia, Pelargonium, Panicum, Pennisetum,*

Ranunculus, *Senecio*, *Salpiglossis*, *Cucumis*, *Browaalia*, *Glycine*, *Lolium*, *Zea*, *Triticum*, *Sorghum*, and *Datura*.

Means for regeneration vary from species to species of plants, but generally a suspension of transformed protoplasts containing copies of the heterologous gene is first provided. Callus tissue is formed and shoots may be induced from callus and subsequently rooted. Alternatively, embryo formation can be induced from the protoplast suspension. These embryos germinate as natural embryos to form plants. The culture media will generally contain various amino acids and hormones, such as auxin and cytokinins. It is also advantageous to add glutamic acid and proline to the medium, especially for such species as corn and alfalfa. Shoots and roots normally develop simultaneously. Efficient regeneration will depend on the medium, on the genotype, and on the history of the culture. If these three variables are controlled, then regeneration is fully reproducible and repeatable.

In some plant cell culture systems, the desired protein of the invention may be excreted or alternatively, the protein may be extracted from the whole plant. Where the desired protein of the invention is secreted into the medium, it may be collected. Alternatively, the embryos and embryoless-half seeds or other plant tissue may be mechanically disrupted to release any secreted protein between cells and tissues. The mixture may be suspended in a buffer solution to retrieve soluble proteins. Conventional protein isolation and purification methods will be then used to purify the recombinant protein. Parameters of time, temperature pH, oxygen, and volumes will be adjusted through routine methods to optimize expression and rccovery of heterologous protein.

iii. Baculovirus Systems

The polynucleotide encoding the protein can also be inserted into a suitable insect expression vector, and is operably linked to the control elements within that vector. Vector construction employs techniques which are known in the art. Generally, the components of thc expression system include a transfer vector, usually a bacterial plasmid, which contains both a fragment of the baculovirus genome, and a convenient restriction site for insertion of the heterologous gene or genes to be expressed; a wild type baculovirus with a sequence homologous to the baculovirus-specific fragment in the transfer vector (this allows for the

homologous recombination of the heterologous gene in to the baculovirus genome); and appropriate insect host cells and growth media.

After inserting the DNA sequence encoding the protein into the transfer vector, the vector and the wild type viral genome are transfected into an insect host cell where the vector and viral genome are allowed to recombine. The packaged recombinant virus is expressed and recombinant plaques are identified and purified. Materials and methods for baculovirus/insect cell expression systems are commercially available in kit form from, *inter alia*, Invitrogen, San Diego CA ("MaxBac" kit). These techniques are generally known to those skilled in the art and fully described in Summers and Smith, *Texas Agricultural Experiment Station Bulletin No. 1555* (1987) (hereinafter "Summers and Smith").

Prior to inserting the DNA sequence encoding the protein into the baculovirus genome, the above described components, comprising a promoter, leader (if desired), coding sequence of interest, and transcription termination sequence, are usually assembled into an intermediate transplacement construct (transfer vector). This construct may contain a single gene and operably linked regulatory elements; multiple genes, each with its owned set of operably linked regulatory elements; or multiple genes, regulated by the same set of regulatory elements. Intermediate transplacement constructs are often maintained in a replicon, such as an extrachromosomal element (e.g., plasmids) capable of stable maintenance in a host, such as a bacterium. The replicon will have a replication system, thus allowing it to be maintained in a suitable host for cloning and amplification.

Currently, the most commonly used transfer vector for introducing foreign genes into AcNPV is pAc373. Many other vectors, known to those of skill in the art, have also been designed. These include, for example, pVL985 (which alters the polyhedrin start codon from ATG to ATT, and which introduces a BamHI cloning site 32 basepairs downstream from the ATT; see Luckow and Summers, *Virology* (1989) *17*:31.

The plasmid usually also contains the polyhedrin polyadenylation signal (Miller et al. (1988) *Ann. Rev. Microbiol.*, *42*:177) and a prokaryotic ampicillin-resistance (*amp*) gene and origin of replication for selection and propagation in *E. coli*.

Baculovirus transfer vectors usually contain a baculovirus promoter. A baculovirus promoter is any DNA sequence capable of binding a baculovirus RNA polymerase and initiating the downstream (5' to 3') transcription of a coding sequence (e.g., structural gene)

into mRNA. A promoter will have a transcription initiation region which is usually placed proximal to the 5' end of the coding sequence. This transcription initiation region usually includes an RNA polymerase binding site and a transcription initiation site. A baculovirus transfer vector may also have a second domain called an enhancer, which, if present, is usually distal to the structural gene. Expression may be either regulated or constitutive.

Structural genes, abundantly transcribed at late times in a viral infection cycle, provide particularly useful promoter sequences. Examples include sequences derived from the gene encoding the viral polyhedron protein, Friesen et al., (1986) "The Regulation of Baculovirus Gene Expression," in: *The Molecular Biology of Baculoviruses* (ed. Walter Doerfler); EPO Publ. Nos. 127 839 and 155 476; and the gene encoding the p10 protein, Vlak et al., (1988), *J. Gen. Virol. 69*:765.

DNA encoding suitable signal sequences can be derived from genes for secreted insect or baculovirus proteins, such as the baculovirus polyhedrin gene (Carbonell et al. (1988) *Gene*, *73*:409). Alternatively, since the signals for mammalian cell posttranslational modifications (such as signal peptide cleavage, proteolytic cleavage, and phosphorylation) appear to be recognized by insect cells, and the signals required for secretion and nuclear accumulation also appear to be conserved between the invertebrate cells and vertebrate cells, leaders of non-insect origin, such as those derived from genes encoding human (alpha) α-interferon, Maeda et al., (1985), *Nature 315*:592; human gastrin-releasing peptide, Lebacq-Verheyden et al., (1988), *Molec. Cell. Biol. 8*:3129; human IL-2, Smith et al., (1985) *Proc. Nat'l Acad. Sci. USA*, *82*:8404; mouse IL-3, (Miyajima et al., (1987) *Gene 58*:273; and human glucocerebrosidase, Martin et al. (1988) *DNA*, *7*:99, can also be used to provide for secretion in insects.

A recombinant polypeptide or polyprotein may be expressed intracellularly or, if it is expressed with the proper regulatory sequences, it can be secreted. Good intracellular expression of nonfused foreign proteins usually requires heterologous genes that ideally have a short leader sequence containing suitable translation initiation signals preceding an ATG start signal. If desired, methionine at the N-terminus may be cleaved from the mature protein by *in vitro* incubation with cyanogen bromide.

Alternatively, recombinant polyproteins or proteins which are not naturally secreted can be secreted from the insect cell by creating chimeric DNA molecules that encode a fusion

protein comprised of a leader sequence fragment that provides for secretion of the foreign protein in insects. The leader sequence fragment usually encodes a signal peptide comprised of hydrophobic amino acids which direct the translocation of the protein into the endoplasmic reticulum.

After insertion of the DNA sequence and/or the gene encoding the expression product precursor of the protein, an insect cell host is co-transformed with the heterologous DNA of the transfer vector and the genomic DNA of wild type baculovirus -- usually by co-transfection. The promoter and transcription termination sequence of the construct will usually comprise a 2-5kb section of the baculovirus genome. Methods for introducing heterologous DNA into the desired site in the baculovirus virus are known in the art. (See Summers and Smith *supra*; Ju et al. (1987); Smith et al., *Mol. Cell. Biol.* (1983) *3*:2156; and Luckow and Summers (1989)). For example, the insertion can be into a gene such as the polyhedrin gene, by homologous double crossover recombination; insertion can also be into a restriction enzyme site engineered into the desired baculovirus gene. Miller et al., (1989), *Bioessays 4*:91. The DNA sequence, when cloned in place of the polyhedrin gene in the expression vector, is flanked both 5' and 3' by polyhedrin-specific sequences and is positioned downstream of the polyhedrin promoter.

The newly formed baculovirus expression vector is subsequently packaged into an infectious recombinant baculovirus. Homologous recombination occurs at low frequency (between about 1% and about 5%); thus, the majority of the virus produced after cotransfection is still wild-type virus. Therefore, a method is necessary to identify recombinant viruses. An advantage of the expression system is a visual screen allowing recombinant viruses to be distinguished. The polyhedrin protein, which is produced by the native virus, is produced at very high levels in the nuclei of infected cells at late times after viral infection. Accumulated polyhedrin protein forms occlusion bodies that also contain embedded particles. These occlusion bodies, up to 15 μm in size, are highly refractile, giving them a bright shiny appearance that is readily visualized under the light microscope. Cells infected with recombinant viruses lack occlusion bodies. To distinguish recombinant virus from wild-type virus, the transfection supernatant is plaqued onto a monolayer of insect cells by techniques known to those skilled in the art. Namely, the plaques are screened under the light microscope for the presence (indicative of wild-type virus) or absence (indicative of

recombinant virus) of occlusion bodies. *Current Protocols in Microbiology* Vol. 2 (Ausubel et al. eds) at 16.8 (Supp. 10, 1990); Summers and Smith, *supra*; Miller et al. (1989).

Recombinant baculovirus expression vectors have been developed for infection into several insect cells. For example, recombinant baculoviruses have been developed for, *inter alia*: *Aedes aegypti* , *Autographa californica*, *Bombyx mori*, *Drosophila melanogaster*, *Spodoptera frugiperda*, and *Trichoplusia ni* (PCT Pub. No. WO 89/046699; Carbonell et al., (1985) *J. Virol. 56*:153; Wright (1986) *Nature 321*:718; Smith et al., (1983) *Mol. Cell. Biol. 3*:2156; and see generally, Fraser, *et al.* (1989) *In Vitro Cell. Dev. Biol. 25*:225).

Cells and cell culture media are commercially available for both direct and fusion expression of heterologous polypeptides in a baculovirus/expression system; cell culture technology is generally known to those skilled in the art. *See,* e.g., Summers and Smith *supra*.

The modified insect cells may then be grown in an appropriate nutrient medium, which allows for stable maintenance of the plasmid(s) present in the modified insect host. Where the expression product gene is under inducible control, the host may be grown to high density, and cxpression induced. Alternatively, where expression is constitutive, the product will be continuously expressed into the medium and the nutrient medium must be continuously circulated, while removing the product of interest and augmenting depleted nutrients. The product may be purified by such techniques as chromatography, e.g., HPLC, affinity chromatography, ion exchange chromatography, etc.; electrophoresis; density gradient centrifugation; solvent extraction, or the like. As appropriate, the product may be further purified, as required, so as to remove substantially any insect proteins which are also secreted in the medium or result from lysis of insect cells, so as to provide a product which is at least substantially free of host debris, e.g., proteins, lipids and polysaccharides.

In order to obtain protein expression, recombinant host cells derived from the transformants are incubated under conditions which allow expression of the recombinant protein encoding sequence. These conditions will vary, dependent upon the host cell selected. However, the conditions are readily ascertainable to those of ordinary skill in the art, based upon what is known in the art.

iv. Bacterial Systems

Bacterial expression techniques are known in the art. A bacterial promoter is any DNA sequence capable of binding bacterial RNA polymerase and initiating the downstream (3') transcription of a coding sequence (e.g. structural gene) into mRNA. A promoter will have a transcription initiation region which is usually placed proximal to the 5' end of the coding sequence. This transcription initiation region usually includes an RNA polymerase binding site and a transcription initiation site. A bacterial promoter may also have a second domain called an operator, that may overlap an adjacent RNA polymerase binding site at which RNA synthesis begins. The operator permits negative regulated (inducible) transcription, as a gene repressor protein may bind the operator and thereby inhibit transcription of a specific gene. Constitutive expression may occur in the absence of negative regulatory elements, such as the operator. In addition, positive regulation may be achieved by a gene activator protein binding sequence, which, if present is usually proximal (5') to the RNA polymerase binding sequence. An example of a gene activator protein is the catabolite activator protein (CAP), which helps initiate transcription of the lac operon in Escherichia coli (*E. coli*) (Raibaud *et al.* (1984) *Annu. Rev. Genet. 18*:173). Regulated expression may therefore be either positive or negative, thereby either enhancing or reducing transcription.

Sequences encoding metabolic pathway enzymes provide particularly useful promoter sequences. Examples include promoter sequences derived from sugar metabolizing enzymes, such as galactose, lactose (*lac*) (Chang *et al.* (1977) *Nature 198*:1056), and maltose. Additional examplcs include promoter sequences derived from biosynthetic enzymes such as tryptophan (*trp*) (Goeddel *et al.* (1980) *Nuc. Acids Res. 8*:4057; Yelverton *et al.* (1981) *Nucl. Acids Res. 9*:731; U.S. Patent 4,738,921; EPO Publ. Nos. 036 776 and 121 775). The beta-lactamase (*bla*) promoter system (Weissmann (1981) "The cloning of interferon and other mistakes." In *Interferon 3* (ed. I. Gresser)), bacteriophage lambda PL (Shimatake *et al.* (1981) *Nature 292*:128) and T5 (U.S. Patent 4,689,406) promoter systems also provide useful promoter sequences.

In addition, synthetic promoters which do not occur in nature also function as bacterial promoters. For example, transcription activation sequences of one bacterial or bacteriophage promoter may be joined with the operon sequences of another bacterial or bacteriophage promoter, creating a synthetic hybrid promoter (U.S. Patent 4,551,433). For

example, the *tac* promoter is a hybrid *trp-lac* promoter comprised of both *trp* promoter and *lac* operon sequences that is regulated by the *lac* repressor (Amann *et al.* (1983) *Gene 25*:167; de Boer *et al.* (1983) *Proc. Natl. Acad. Sci. 80*:21). Furthermore, a bacterial promoter can include naturally occurring promoters of non-bacterial origin that have the ability to bind bacterial RNA polymerase and initiate transcription. A naturally occurring promoter of non-bacterial origin can also be coupled with a compatible RNA polymerase to produce high levels of expression of some genes in prokaryotes. The bacteriophage T7 RNA polymerase/promoter system is an example of a coupled promoter system (Studier *et al.* (1986) *J. Mol. Biol. 189*:113; Tabor *et al.* (1985) *Proc Natl. Acad. Sci. 82*:1074). In addition, a hybrid promoter can also be comprised of a bacteriophage promoter and an *E. coli* operator region (EPO Publ. No. 267 851).

In addition to a functioning promoter sequence, an efficient ribosome binding site is also useful for the expression of foreign genes in prokaryotes. In *E. coli*, the ribosome binding site is called the Shine-Dalgarno (SD) sequence and includes an initiation codon (ATG) and a sequence 3-9 nucleotides in length located 3-11 nucleotides upstream of the initiation codon (Shine *et al.* (1975) *Nature 254*:34). The SD sequence is thought to promote binding of mRNA to the ribosome by the pairing of bases between the SD sequence and the 3' end of *E. coli* 16S rRNA (Steitz *et al.* (1979) "Genetic signals and nucleotide sequences in messenger RNA." In *Biological Regulation and Development: Gene Expression* (ed. R.F. Goldberger)). To express eukaryotic genes and prokaryotic genes with weak ribosome-binding site, it is often necessary to optimize the distance between the SD sequence and the ATG of the eukaryotic gene (Sambrook *et al.* (1989) "Expression of cloned genes in Escherichia coli." In *Molecular Cloning: A Laboratory Manual*).

A DNA molecule may be expressed intracellularly. A promoter sequence may be directly linked with the DNA molecule, in which case the first amino acid at the N-terminus will always be a methionine, which is encoded by the ATG start codon. If desired, methionine at the N-terminus may be cleaved from the protein by *in vitro* incubation with cyanogen bromide or by either *in vivo* or *in vitro* incubation with a bacterial methionine N-terminal peptidase (EPO Publ. No. 219 237).

Fusion proteins provide an alternative to direct expression. Usually, a DNA sequence encoding the N-terminal portion of an endogenous bacterial protein, or other stable protein, is

fused to the 5' end of heterologous coding sequences. Upon expression, this construct will provide a fusion of the two amino acid sequences. For example, the bacteriophage lambda cell gene can be linked at the 5' terminus of a foreign gene and expressed in bacteria. The resulting fusion protein preferably retains a site for a processing enzyme (factor Xa) to cleave the bacteriophage protein from the foreign gene (Nagai *et al.* (1984) *Nature 309*:810). Fusion proteins can also be made with sequences from the *lacZ* (Jia *et al.* (1987) *Gene 60*:197), *trpE* (Allen et al. (1987) J. Biotechnol. 5:93; Makoff *et al.* (1989) *J. Gen. Microbiol. 135*:11), and *Chey* (EPO Publ. No. 324 647) genes. The DNA sequence at the junction of the two amino acid sequences may or may not encodc a cleavable site. Anothcr example is a ubiquitin fusion protein. Such a fusion protein is made with the ubiquitin region that preferably retains a site for a processing enzyme (e.g. ubiquitin specific processing-protease) to cleave the ubiquitin from the foreign protein. Through this method, native foreign protein can be isolated (Miller *et al.* (1989) *Bio/Technology 7*:698).

Alternatively, foreign proteins can also be secreted from the cell by creating chimeric DNA molecules that encode a fusion protein comprised of a signal peptide sequence fragment that provides for secretion of the foreign protein in bacteria (U.S. Patent 4,336,336). The signal sequence fragment usually encodes a signal peptide comprised of hydrophobic amino acids which direct the secretion of the protein from the cell. The protein is either secreted into the growth media (gram-positive bacteria) or into the periplasmic space, located between the inner and outer membrane of the cell (gram-negative bacteria). Preferably there are processing sites, which can be cleaved either *in vivo* or *in vitro* encoded between the signal peptide fragment and the foreign gene.

DNA encoding suitable signal sequences can be derived from genes for secreted bacterial proteins, such as the *E. coli* outer membrane protein gene (*ompA*) (Masui *et al.* (1983), in: *Experimental Manipulation of Gene Expression*; Ghrayeb *et al.* (1984) *EMBO J. 3*:2437) and the *E. coli* alkaline phosphatase signal sequence (*phoA*) (Oka *et al.* (1985) *Proc. Natl. Acad. Sci. 82*:7212). As an additional example, the signal sequence of the alpha-amylase gene from various Bacillus strains can be used to secrete heterologous proteins from *B. subtilis* (Palva *et al.* (1982) *Proc. Natl. Acad. Sci. USA 79*:5582; EPO Publ. No. 244 042).

Usually, transcription termination sequences recognized by bacteria are regulatory regions located 3' to the translation stop codon, and thus together with the promoter flank the

coding sequence. These sequences direct the transcription of an mRNA which can be translated into the polypeptide encoded by the DNA. Transcription termination sequences frequently include DNA sequences of about 50 nucleotides capable of forming stem loop structures that aid in terminating transcription. Examples include transcription termination sequences derived from genes with strong promoters, such as the *trp* gene in *E. coli* as well as other biosynthetic genes.

Usually, the above described components, comprising a promoter, signal sequence (if desired), coding sequence of interest, and transcription termination sequence, are put together into expression constructs. Expression constructs are often maintained in a replicon, such as an extrachromosomal element (e.g., plasmids) capable of stable maintenance in a host, such as bacteria. The replicon will have a replication system, thus allowing it to be maintained in a prokaryotic host either for expression or for cloning and amplification. In addition, a replicon may be either a high or low copy number plasmid. A high copy number plasmid will generally have a copy number ranging from about 5 to about 200, and usually about 10 to about 150. A host containing a high copy number plasmid will preferably contain at least about 10, and more preferably at least about 20 plasmids. Either a high or low copy number vector may be selected, depending upon the effect of the vector and the foreign protein on the host.

Alternatively, the expression constructs can be integrated into the bacterial genome with an integrating vector. Integrating vectors usually contain at least one sequence homologous to the bacterial chromosome that allows the vector to integrate. Integrations appear to result from recombinations between homologous DNA in the vector and the bacterial chromosome. For example, integrating vectors constructed with DNA from various Bacillus strains integrate into the Bacillus chromosome (EPO Publ. No. 127 328). Integrating vectors may also be comprised of bacteriophage or transposon sequences.

Usually, extrachromosomal and integrating expression constructs may contain selectable markers to allow for the selection of bacterial strains that have been transformed. Selectable markers can be expressed in the bacterial host and may include genes which render bacteria resistant to drugs such as ampicillin, chloramphenicol, erythromycin, kanamycin (neomycin), and tetracycline (Davies *et al.* (1978) *Annu. Rev. Microbiol. 32*:469). Selectable

markers may also include biosynthetic genes, such as those in the histidine, tryptophan, and leucine biosynthetic pathways.

Alternatively, some of the above described components can be put together in transformation vectors. Transformation vectors are usually comprised of a selectable market that is either maintained in a replicon or developed into an integrating vector, as described above.

Expression and transformation vectors, either extra-chromosomal replicons or integrating vectors, have been developed for transformation into many bacteria. For example, expression vectors have been developed for, *inter alia*, the following bacteria: Bacillus subtilis (Palva *et al.* (1982) *Proc. Natl. Acad. Sci. USA 79*:5582; EPO Publ. Nos. 036 259 and 063 953; PCT Publ. No. WO 84/04541), Escherichia coli (Shimatake *et al.* (1981) *Nature 292*:128; Amann *et al.* (1985) *Gene 40*:183; Studier *et al.* (1986) *J. Mol. Biol. 189*:113; EPO Publ. Nos. 036 776, 136 829 and 136 907), Streptococcus cremoris (Powell *et al.* (1988) *Appl. Environ. Microbiol. 54*:655); Streptococcus lividans (Powell *et al.* (1988) *Appl. Environ. Microbiol. 54*:655), Streptomyces lividans (U.S. Patent 4,745,056).

Methods of introducing exogenous DNA into bacterial hosts are well-known in the art, and usually include either the transformation of bacteria treated with $CaCl_2$ or other agents, such as divalent cations and DMSO. DNA can also be introduced into bacterial cells by electroporation. Transformation procedures usually vary with the bacterial species to be transformed. (See e.g., use of *Bacillus*: Masson *et al.* (1989) *FEMS Microbiol. Lett. 60*:273; Palva *et al.* (1982) *Proc. Natl. Acad. Sci. USA 79*:5582; EPO Publ. Nos. 036 259 and 063 953; PCT Publ. No. WO 84/04541; use of *Campylobacter*: Miller *et al.* (1988) *Proc. Natl. Acad. Sci. 85*:856; and Wang *et al.* (1990) *J. Bacteriol. 172*:949; use of *Escherichia coli:* Cohen *et al.* (1973) *Proc. Natl. Acad. Sci. 69*:2110; Dower *et al.* (1988) *Nucleic Acids Res. 16*:6127; Kushner (1978) "An improved method for transformation of *Escherichia coli* with ColE1-derived plasmids. In *Genetic Engineering: Proceedings of the International Symposium on Genetic Engineering* (eds. H.W. Boyer and S. Nicosia); Mandel *et al.* (1970) *J. Mol. Biol. 53*:159; Taketo (1988) *Biochim. Biophys. Acta 949*:318; use of *Lactobacillus*: Chassy *et al.* (1987) *FEMS Microbiol. Lett. 44*:173; use of *Pseudomonas*: Fiedler *et al.* (1988) *Anal. Biochem 170*:38; use of *Staphylococcus*: Augustin *et al.* (1990) *FEMS Microbiol. Lett. 66*:203; use of *Streptococcus*: Barany *et al.* (1980) *J. Bacteriol. 144*:698;

Harlander (1987) "Transformation of Streptococcus lactis by electroporation, in: *Streptococcal Genetics* (ed. J. Ferretti and R. Curtiss III); Perry *et al.* (1981) *Infect. Immun. 32*:1295; Powell *et al.* (1988) *Appl. Environ. Microbiol. 54*:655; Somkuti *et al.* (1987) *Proc. 4th Evr. Cong. Biotechnology 1*:412.

v. Yeast Expression

Yeast expression systems are also known to one of ordinary skill in the art. A yeast promoter is any DNA sequence capable of binding yeast RNA polymerase and initiating the downstream (3') transcription of a coding sequence (e.g. structural gene) into mRNA. A promoter will have a transcription initiation region which is usually placed proximal to the 5' end of the coding sequence. This transcription initiation region usually includes an RNA polymerase binding site (the "TATA Box") and a transcription initiation site. A yeast promoter may also have a second domain called an upstream activator sequence (UAS), which, if present, is usually distal to the structural gene. The UAS permits regulated (inducible) expression. Constitutivc expression occurs in the absence of a UAS. Regulated expression may be either positive or negative, thereby either enhancing or reducing transcription.

Yeast is a fermenting organism with an active metabolic pathway, therefore sequences encoding enzymes in the metabolic pathway provide particularly useful promoter sequences. Examples include alcohol dehydrogenase (ADH) (EPO Publ. No. 284 044), enolase, glucokinase, glucose-6-phosphate isomerase, glyceraldehydc-3-phosphate-dehydrogenase (GAP or GAPDH), hexokinase, phosphofructokinase, 3-phosphoglycerate mutase, and pyruvate kinase (PyK) (EPO Publ. No. 329 203). The yeast *PHO5* gcne, encoding acid phosphatase, also provides useful promoter sequences (Myanohara *et al.* (1983) *Proc. Natl. Acad. Sci. USA 80*:1).

In addition, synthetic promoters which do not occur in nature also function as yeast promoters. For example, UAS sequences of one yeast promoter may be joined with the transcription activation region of another yeast promoter, creating a synthetic hybrid promoter. Examples of such hybrid promoters include the ADH regulatory sequence linked to the GAP transcription activation region (U.S. Patent Nos. 4,876,197 and 4,880,734). Other examples of hybrid promoters include promoters which consist of the regulatory sequences of

either the *ADH2*, *GAL4*, *GAL10*, OR *PHO5* genes, combined with the transcriptional activation region of a glycolytic enzyme gene such as GAP or PyK (EPO Publ. No. 164 556). Furthermore, a yeast promoter can include naturally occurring promoters of non-yeast origin that have the ability to bind yeast RNA polymerase and initiate transcription. Examples of such promoters include, *inter alia*, (Cohen *et al.* (1980) *Proc. Natl. Acad. Sci. USA 77*:1078; Henikoff *et al.* (1981) *Nature 283*:835; Hollenberg *et al.* (1981) *Curr. Topics Microbiol. Immunol. 96*:119; Hollenberg *et al.* (1979) "The Expression of Bacterial Antibiotic Resistance Genes in the Yeast Saccharomyces cerevisiae," in: *Plasmids of Medical, Environmental and Commercial Importance* (eds. K.N. Timmis and A. Puhler); Mercerau-Puigalon *et al.* (1980) *Gene 11*:163; Panthier *et al.* (1980) *Curr. Genet. 2*:109;).

A DNA molecule may be expressed intracellularly in yeast. A promoter sequence may be directly linked with the DNA molecule, in which case the first amino acid at the N-terminus of the recombinant protein will always be a methionine, which is encoded by the ATG start codon. If desired, methionine at the N-terminus may be cleaved from the protein by *in vitro* incubation with cyanogen bromide.

Fusion proteins provide an alternative for yeast expression systems, as well as in mammalian, plant, baculovirus, and bacterial expression systems. Usually, a DNA sequence encoding the N-terminal portion of an endogenous yeast protein, or other stable protein, is fused to the 5' end of heterologous coding sequences. Upon expression, this construct will provide a fusion of the two amino acid sequences. For example, the yeast or human superoxide dismutasc (SOD) gene, can be linked at the 5' terminus of a foreign gene and expressed in yeast. The DNA sequence at the junction of the two amino acid sequences may or may not encode a cleavable site. See e.g., EPO Publ. No. 196056. Another example is a ubiquitin fusion protein. Such a fusion protein is made with the ubiquitin region that preferably retains a site for a processing enzyme (e.g. ubiquitin-specific processing protease) to cleave the ubiquitin from the foreign protein. Through this method, therefore, native foreign protein can be isolated (e.g., WO88/024066).

Alternatively, foreign proteins can also be secreted from the cell into the growth media by creating chimeric DNA molecules that encode a fusion protein comprised of a leader sequence fragment that provide for secretion in yeast of the foreign protein. Preferably, there are processing sites encoded between the leader fragment and the foreign gene that can

be cleaved either *in vivo* or *in vitro*. The leader sequence fragment usually encodes a signal peptide comprised of hydrophobic amino acids which direct the secretion of the protein from the cell.

DNA encoding suitable signal sequences can be derived from genes for secreted yeast proteins, such as the yeast invertase gene (EPO Publ. No. 012 873; JPO Publ. No. 62:096,086) and the A-factor gene (U.S. Patent 4,588,684). Alternatively, leaders of non-yeast origin, such as an interferon leader, exist that also provide for secretion in yeast (EPO Publ. No. 060 057).

A preferred class of secretion leaders are those that employ a fragment of the yeast alpha-factor gene, which contains both a "pre" signal sequence, and a "pro" region. The types of alpha-factor fragments that can be employed include the full-length pre-pro alpha factor leader (about 83 amino acid residues) as well as truncated alpha-factor leaders (usually about 25 to about 50 amino acid residues) (U.S. Patent Nos. 4,546,083 and 4,870,008; EPO Publ. No. 324 274). Additional leaders employing an alpha-factor leader fragment that provides for secretion include hybrid alpha-factor leaders made with a presequence of a first yeast, but a pro-region from a second yeast alpha factor. (See e.g., PCT Publ. No. WO 89/02463.)

Usually, transcription termination sequences recognized by yeast are regulatory regions located 3' to the translation stop codon, and thus together with the promoter flank the coding sequence. These sequences direct the transcription of an mRNA which can be translated into the polypeptide encoded by the DNA. Examples of transcription terminator sequence and other yeast-recognized termination sequences, such as those coding for glycolytic enzymes.

Usually, the above described components, comprising a promoter, leader (if desired), coding sequence of interest, and transcription termination sequence, are put together into expression constructs. Expression constructs are often maintained in a replicon, such as an extrachromosomal element (e.g., plasmids) capable of stable maintenance in a host, such as yeast or bacteria. The replicon may have two replication systems, thus allowing it to be maintained, for example, in yeast for expression and in a prokaryotic host for cloning and amplification. Examples of such yeast-bacteria shuttle vectors include YEp24 (Botstein *et al.* (1979) *Gene 8*:17-24), pCl/1 (Brake *et al.* (1984) *Proc. Natl. Acad. Sci USA 81*:4642-4646), and YRp17 (Stinchcomb *et al.* (1982) *J. Mol. Biol. 158*:157). In addition, a replicon may be

either a high or low copy number plasmid. A high copy number plasmid will generally have a copy number ranging from about 5 to about 200, and usually about 10 to about 150. A host containing a high copy number plasmid will preferably have at least about 10, and more preferably at least about 20. Enter a high or low copy number vector may be selected, depending upon the effect of the vector and the foreign protein on the host. See e.g., Brake *et al., supra*.

Alternatively, the expression constructs can be integrated into the yeast genome with an integrating vector. Integrating vectors usually contain at least one sequence homologous to a yeast chromosome that allows the vector to integrate, and preferably contain two homologous sequences flanking the expression construct. Integrations appear to result from recombinations between homologous DNA in the vector and the yeast chromosome (Orr-Weaver *et al.* (1983) *Methods in Enzymol. 101*:228-245). An integrating vector may be directed to a specific locus in yeast by selecting the appropriate homologous sequence for inclusion in the vector. See Orr-Weaver *et al., supra.* One or more expression construct may integrate, possibly affecting levels of recombinant protein produced (Rine *et al.* (1983) *Proc. Natl. Acad. Sci. USA 80*:6750). The chromosomal sequences included in the vector can occur either as a single segment in the vector, which results in the integration of the entire vector, or two segments homologous to adjacent segments in the chromosome and flanking the expression construct in the vector, which can result in the stable integration of only the expression construct.

Usually, extrachromosomal and integrating expression constructs may contain selectable markers to allow for the selection of yeast strains that have been transformed. Selectable markcrs may include biosynthetic genes that can be expressed in the yeast host, such as *ADE2*, *HIS4*, *LEU2*, *TRP1*, and *ALG7*, and the G418 resistance gene, which confer rcsistance in yeast cells to tunicamycin and G418, respectively. In addition, a suitable selectable marker may also provide yeast with the ability to grow in the presence of toxic compounds, such as metal. For example, the presence of *CUP1* allows yeast to grow in the presence of copper ions (Butt *et al.* (1987) *Microbiol, Rev. 51*:351).

Alternatively, some of the above described components can be put together into transformation vectors. Transformation vectors are usually comprised of a selectable marker

that is either maintained in a replicon or developed into an integrating vector, as described above.

Expression and transformation vectors, either extrachromosomal replicons or integrating vectors, have been developed for transformation into many yeasts. For example, expression vectors and methods of introducing exogenous DNA into yeast hosts have been developed for, *inter alia*, the following yeasts: *Candida albicans* (Kurtz, *et al.* (1986) *Mol. Cell. Biol. 6*:142); *Candida maltosa* (Kunze, *et al.* (1985) *J. Basic Microbiol. 25*:141); *Hansenula polymorpha* (Gleeson, *et al.* (1986) *J. Gen. Microbiol. 132*:3459; Roggenkamp *et al.* (1986) *Mol. Gen. Genet. 202*:302); *Kluyveromyces fragilis* (Das, *et al.* (1984) *J. Bacteriol. 158*:1165); *Kluyveromyces lactis* (De Louvencourt *et al.* (1983) *J. Bacteriol. 154*:737; Van den Berg *et al.* (1990) *Bio/Technology 8*:135); *Pichia guillerimondii* (Kunze *et al.* (1985) *J. Basic Microbiol. 25*:141); *Pichia pastoris* (Cregg, *et al.* (1985) *Mol. Cell. Biol. 5*:3376; U.S. Patent Nos. 4,837,148 and 4,929,555); *Saccharomyces cerevisiae* (Hinnen *et al.* (1978) *Proc. Natl. Acad. Sci. USA 75*:1929; Ito *et al.* (1983) *J. Bacteriol. 153*:163); *Schizosaccharomyces pombe* (Beach and Nurse (1981) *Nature 300*:706); and *Yarrowia lipolytica* (Davidow, *et al.* (1985) *Curr. Genet. 10*:380471 Gaillardin, *et al.* (1985) *Curr. Genet. 10*:49).

Methods of introducing exogenous DNA into yeast hosts are well-known in the art, and usually include either the transformation of spheroplasts or of intact yeast cells treated with alkali cations. Transformation procedures usually vary with the yeast species to be transformed. See e.g., [Kurtz *et al.* (1986) *Mol. Cell. Biol. 6*:142; Kunze *et al.* (1985) *J. Basic Microbiol. 25*:141; Candida]; [Gleeson *et al.* (1986) *J. Gen. Microbiol. 132*:3459; Roggenkamp *et al.* (1986) *Mol. Gen. Genet. 202*:302; Hansenula]; [Das *et al.* (1984) *J. Bacteriol. 158*:1165; De Louvencourt *et al.* (1983) *J. Bacteriol. 154*:1165; Van den Berg *et al.* (1990) *Bio/Technology 8*:135; Kluyveromyces]; [Cregg *et al.* (1985) *Mol. Cell. Biol. 5*:3376; Kunze *et al.* (1985) *J. Basic Microbiol. 25*:141; U.S. Patent Nos. 4,837,148 and 4,929,555; Pichia]; [Hinnen *et al.* (1978) *Proc. Natl. Acad. Sci. USA 75*;1929; Ito *et al.* (1983) *J. Bacteriol. 153*:163 Saccharomyces]; [Beach and Nurse (1981) *Nature 300*:706; Schizosaccharomyces]; [Davidow *et al.* (1985) *Curr. Genet. 10*:39; Gaillardin *et al.* (1985) *Curr. Genet. 10*:49; Yarrowia].

Definitions

A composition containing X is "substantially free of" Y when at least 85% by weight of the total X+Y in the composition is X. Preferably, X comprises at least about 90% by weight of the total of X+Y in the composition, more preferably at least about 95% or even 99% by weight.

The term "heterologous" refers to two biological components that are not found together in nature. The components may be host cells, genes, or regulatory regions, such as promoters. Although the heterologous components are not found together in nature, they can function together, as when a promoter heterologous to a gene is operably linked to the gene. Another example is where a Neisserial sequence is heterologous to a mouse host cell.

An "origin of replication" is a polynucleotide sequence that initiates and regulates replication of polynucleotides, such as an expression vector. The origin of replication behaves as an autonomous unit of polynucleotide replication within a cell, capable of replication under its own control. An origin of replication may be needed for a vector to replicate in a particular host cell. With certain origins of replication, an expression vector can be reproduced at a high copy number in the presence of the appropriate proteins within the cell. Examples of origins are the autonomously replicating sequences, which are effective in yeast; and the viral T-antigen, effective in COS-7 cells.

A "mutant" sequence is defined as a DNA, RNA or amino acid sequence differing from but having homology with the native or disclosed sequence. Depending on the particular sequence, the degree of homology between the native or disclosed sequence and the mutant sequence is preferably greater than 50% (e.g., 60%, 70%, 80%, 90%, 95%, 99% or more) which is calculated as described above. As used herein, an "allelic variant" of a nucleic acid molecule, or region, for which nucleic acid sequence is provided herein is a nucleic acid molecule, or region, that occurs at essentially the same locus in the genome of another or second isolate, and that, due to natural variation caused by, for example, mutation or recombination, has a similar but not identical nucleic acid sequence. A coding region allelic variant typically encodes a protein having similar activity to that of the protein encoded by the gene to which it is being compared. An allelic variant can also comprise an alteration in the 5' or 3' untranslated regions of the gene, such as in regulatory control regions. (see, for example, U.S. Patent 5,753,235).

Antibodies

As used herein, the term "antibody" refers to a polypeptide or group of polypeptides composed of at least one antibody combining site. An "antibody combining site" is the three-dimensional binding space with an internal surface shape and charge distribution complementary to the features of an epitope of an antigen, which allows a binding of the antibody with the antigen. "Antibody" includes, for example, vertebrate antibodies, hybrid antibodies, chimeric antibodies, humanized antibodies, altered antibodies, univalent antibodies, Fab proteins, and single domain antibodies.

Antibodies against the proteins of the invention are useful for affinity chromatography, immunoassays, and distinguishing/identifying *Neisseria* MenB proteins. Antibodies elicited against the proteins of the present invention bind to antigenic polypeptides or proteins or protein fragments that are present and specifically associated with strains of *Neisseria meningitidis* MenB. In some instances, these antigens may be associated with specific strains, such as those antigens specific for the MenB strains. The antibodies of the invention may be immobilized to a matrix and utilized in an immunoassay or on an affinity chromatography column, to enable the detection and/or separation of polypeptides, proteins or protein fragments or cells comprising such polypeptides, proteins or protein fragments. Alternatively, such polypeptides, proteins or protein fragments may be immobilized so as to detect antibodies bindably specific thereto.

Antibodies to the proteins of the invention, both polyclonal and monoclonal, may be prepared by conventional methods. In general, the protein is first used to immunize a suitable animal, preferably a mouse, rat, rabbit or goat. Rabbits and goats are preferred for the preparation of polyclonal sera due to the volume of serum obtainable, and the availability of labeled anti-rabbit and anti-goat antibodies. Immunization is generally performed by mixing or emulsifying the protein in saline, preferably in an adjuvant such as Freund's complete adjuvant, and injecting the mixture or emulsion parenterally (generally subcutaneously or intramuscularly). A dose of 50-200 μg/injection is typically sufficient. Immunization is generally boosted 2-6 weeks later with one or more injections of the protein in saline, preferably using Freund's incomplete adjuvant. One may alternatively generate antibodies by in vitro immunization using methods known in the art, which for the purposes of this

invention is considered equivalent to *in vivo* immunization. Polyclonal antisera is obtained by bleeding the immunized animal into a glass or plastic container, incubating the blood at 25°C for one hour, followed by incubating at 4°C for 2-18 hours. The serum is recovered by centrifugation (e.g., 1,000*g* for 10 minutes). About 20-50 ml per bleed may be obtained from rabbits.

Monoclonal antibodies are prepared using the standard method of Kohler & Milstein (*Nature* (1975) 256:495-96), or a modification thereof. Typically, a mouse or rat is immunized as described above. However, rather than bleeding the animal to extract serum, the spleen (and optionally several large lymph nodes) is removed and dissociated into single cells. If desired, the spleen cells may be screened (after removal of nonspecifically adherent cells) by applying a cell suspension to a plate or well coated with the protein antigen. B-cells that express membrane-bound immunoglobulin specific for the antigen bind to the plate, and are not rinsed away with the rest of the suspension. Resulting B-cells, or all dissociated spleen cells, are then induced to fuse with myeloma cells to form hybridomas, and are cultured in a selective medium (e.g., hypoxanthine, aminopterin, thymidine medium, "HAT"). The resulting hybridomas are plated by limiting dilution, and are assayed for the production of antibodies which bind specifically to the immunizing antigen (and which do not bind to unrelated antigens). The selected MAb-secreting hybridomas are then cultured either *in vitro* (e.g., in tissue culture bottles or hollow fiber reactors), or *in vivo* (as ascites in mice).

If desired, the antibodies (whether polyclonal or monoclonal) may be labeled using conventional techniques. Suitable labels include fluorophores, chromophores, radioactive atoms (particularly ^{32}P and ^{125}I), electron-dense reagents, enzymes, and ligands having specific binding partners. Enzymes are typically detected by their activity. For example, horseradish peroxidase is usually detected by its ability to convert 3,3',5,5'-tetramethylbenzidine (TMB) to a blue pigment, quantifiable with a spectrophotometer. "Specific binding partner" refers to a protein capable of binding a ligand molecule with high specificity, as for example in the case of an antigen and a monoclonal antibody specific therefor. Other specific binding partners include biotin and avidin or streptavidin, IgG and protein A, and the numerous receptor-ligand couples known in the art. It should be understood that the above description is not meant to categorize the various

labels into distinct classes, as the same label may serve in several different modes. For example, ^{125}I may serve as a radioactive label or as an electron-dense reagent. HRP may serve as enzyme or as antigen for a MAb. Further, one may combine various labels for desired effect. For example, MAbs and avidin also require labels in the practice of this invention: thus, one might label a MAb with biotin, and detect its presence with avidin labeled with ^{125}I, or with an anti-biotin MAb labeled with HRP. Other permutations and possibilities will be readily apparent to those of ordinary skill in the art, and are considered as equivalents within the scope of the instant invention.

Antigens, immunogens, polypeptides, proteins or protein fragments of the present invention elicit formation of specific binding partner antibodies. These antigens, immunogens, polypeptides, proteins or protein fragments of the present invention comprise immunogenic compositions of the present invention. Such immunogenic compositions may further comprise or include adjuvants, carriers, or other compositions that promote or enhance or stabilize the antigens, polypeptides, proteins or protein fragments of the present invention. Such adjuvants and carriers will be readily apparent to those of ordinary skill in the art.

Pharmaceutical Compositions

Pharmaceutical compositions can include either polypeptides, antibodies, or nucleic acid of the invention. The pharmaceutical compositions will comprise a therapeutically effective amount of either polypcptides, antibodies, or polynucleotides of the claimed invention.

The term "therapeutically effective amount" as used herein refers to an amount of a therapeutic agent to treat, ameliorate, or prevent a desired disease or condition, or to exhibit a detectable therapeutic or preventative effect. The effect can be detected by, for example, chemical markers or antigen levels. Therapeutic effects also include reduction in physical symptoms, such as decreased body temperature, when given to a patient that is febrile. The precise effective amount for a subject will depend upon the subject's size and health, the nature and extent of the condition, and the therapeutics or combination of therapeutics selected for administration. Thus, it is not useful to specify an exact effective amount in

advance. However, the effective amount for a given situation can be determined by routine experimentation and is within the judgment of the clinician.

For purposes of the present invention, an effective dose will be from about 0.01 mg/kg to 50 mg/kg or 0.05 mg/kg to about 10 mg/kg of the DNA constructs in the individual to which it is administered.

A pharmaceutical composition can also contain a pharmaceutically acceptable carrier. The term "pharmaceutically acceptable carrier" refers to a carrier for administration of a therapeutic agent, such as antibodies or a polypeptide, genes, and other therapeutic agents. The term refers to any pharmaceutical carrier that does not itself induce the production of antibodies harmful to the individual receiving the composition, and which may be administered without undue toxicity. Suitable carriers may be large, slowly metabolized macromolecules such as proteins, polysaccharides, polylactic acids, polyglycolic acids, polymeric amino acids, amino acid copolymers, and inactive virus particles. Such carriers are well known to those of ordinary skill in the art.

Pharmaceutically acceptable salts can be used therein, for example, mineral acid salts such as hydrochlorides, hydrobromides, phosphates, sulfates, and the like; and the salts of organic acids such as acetates, propionates, malonates, benzoates, and the like. A thorough discussion of pharmaceutically acceptable excipients is available in Remington's Pharmaceutical Sciences (Mack Pub. Co., N.J. 1991).

Pharmaceutically acceptable carriers in therapeutic compositions may contain liquids such as water, saline, glycerol and ethanol. Additionally, auxiliary substances, such as wetting or emulsifying agents, pH buffering substances, and the like, may be present in such vehicles. Typically, the therapeutic compositions are prepared as injectables, either as liquid solutions or suspensions; solid forms suitable for solution in, or suspension in, liquid vehicles prior to injection may also be prepared. Liposomes are included within the definition of a pharmaceutically acceptable carrier.

Delivery Methods

Once formulated, the compositions of the invention can be administered directly to the subject. The subjects to be treated can be animals; in particular, human subjects can be treated.

Direct delivery of the compositions will generally be accomplished by injection, either subcutaneously, intraperitoneally, intravenously or intramuscularly or delivered to the interstitial space of a tissue. The compositions can also be administered into a lesion. Other modes of administration include oral and pulmonary administration, suppositories, and transdermal and transcutaneous applications, needles, and gene guns or hyposprays. Dosage treatment may be a single dose schedule or a multiple dose schedule.

Vaccines

Vaccines according to the invention may either be prophylactic (i.e., to prevent infection) or therapeutic (i.e., to treat disease after infection).

Such vaccines comprise immunizing antigen(s) or immunogen(s), immunogenic polypeptide, protein(s) or protein fragments, or nucleic acids (e.g., ribonucleic acid or deoxyribonucleic acid), usually in combination with "pharmaceutically acceptable carriers," which include any carrier that does not itself induce the production of antibodies harmful to the individual receiving the composition. Suitable carriers are typically large, slowly metabolized macromolecules such as proteins, polysaccharides, polylactic acids, polyglycolic acids, polymeric amino acids, amino acid copolymers, lipid aggregates (such as oil droplets or liposomes), and inactive virus particles. Such carriers are well known to those of ordinary skill in the art. Additionally, these carriers may function as immunostimulating agents ("adjuvants"). Furthermore, the immunogen or antigen may be conjugated to a bacterial toxoid, such as a toxoid from diphtheria, tetanus, cholera, *H. pylori*, etc. pathogens.

Preferred adjuvants to enhance effectiveness of the composition include, but are not limited to: (1) aluminum salts (alum), such as aluminum hydroxide, aluminum phosphate, aluminum sulfate, etc; (2) oil-in-water emulsion formulations (with or without other specific immunostimulating agents such as muramyl peptides (see below) or bacterial cell wall components), such as for example (a) MF59 (PCT Publ. No. WO 90/14837), containing 5% Squalene, 0.5% Tween 80, and 0.5% Span 85 (optionally containing various amounts of MTP-PE (see below), although not required) formulated into submicron particles using a microfluidizer such as Model 110Y microfluidizer (Microfluidics, Newton, MA), (b) SAF, containing 10% Squalane, 0.4% Tween 80, 5% pluronic-blocked polymer L121, and thr-MDP (see below) either microfluidized into a submicron emulsion or vortexed to generate a

larger particle size emulsion, and (c) Ribi™ adjuvant system (RAS), (Ribi Immunochem, Hamilton, MT) containing 2% Squalene, 0.2% Tween 80, and one or more bacterial cell wall components from the group consisting of monophosphorylipid A (MPL), trehalose dimycolate (TDM), and cell wall skeleton (CWS), preferably MPL + CWS (Detox™); (3) saponin adjuvants, such as Stimulon™ (Cambridge Bioscience, Worcester, MA) may be used or particles generated therefrom such as ISCOMs (immunostimulating complexes); (4) Complete Freund's Adjuvant (CFA) and Incomplete Freund's Adjuvant (IFA); (5) cytokines, such as interleukins (e.g., IL-1, IL-2, IL-4, IL-5, IL-6, IL-7, IL-12, *etc.*), interferons (e.g., gamma interferon), macrophage colony stimulating factor (M-CSF), tumor necrosis factor (TNF), etc; (6) detoxified mutants of a bacterial ADP-ribosylating toxin such as a cholera toxin (CT), a pertussis toxin (PT), or an E. coli heat-labile toxin (LT), particularly LT-K63, LT-R72, CT-S109, PT-K9/G129; see, e.g., WO 93/13302 and WO 92/19265; and (7) other substances that act as immunostimulating agents to enhance the effectiveness of the composition. Alum and MF59 are preferred.

As mentioned above, muramyl peptides include, but are not limited to, N-acetyl-muramyl-L-threonyl-D-isoglutamine (thr-MDP), N-acetyl-normuramyl-L-alanyl-D-isoglutamine (nor-MDP), N-acetylmuramyl-L-alanyl-D-isoglutaminyl-L-alanine-2-(1'-2'-dipalmitoyl-*sn*-glycero-3-huydroxyphosphoryloxy)-ethylamine (MTP-PE), *etc.*

The vaccine compositions comprising immunogenic compositions (e.g., which may include the antigen, pharmaceutically acceptable carrier, and adjuvant) typically will contain diluents, such as water, saline, glycerol, ethanol, etc. Additionally, auxiliary substances, such as wetting or emulsifying agents, pH buffering substances, and the like, may be present in such vehicles. Alternatively, vaccine compositions comprising immunogenic compositions may comprise an antigen, polypeptide, protein, protein fragment or nucleic acid in a pharmaceutically acceptable carrier.

More specifically, vaccines comprising immunogenic compositions comprise an immunologically effective amount of the immunogenic polypeptides, as well as any other of the above-mentioned components, as needed. By "immunologically effective amount", it is meant that the administration of that amount to an individual, either in a single dose or as part of a series, is effective for treatment or prevention. This amount varies depending upon the health and physical condition of the individual to be treated, the taxonomic group of

individual to be treated (e.g., nonhuman primate, primate, *etc.*), the capacity of the individual's immune system to synthesize antibodies, the degree of protection desired, the formulation of the vaccine, the treating doctor's assessment of the medical situation, and other relevant factors. It is expected that the amount will fall in a relatively broad range that can be determined through routine trials.

Typically, the vaccine compositions or immunogenic compositions are prepared as injectables, either as liquid solutions or suspensions; solid forms suitable for solution in, or suspension in, liquid vehicles prior to injection may also be prepared. The preparation also may be emulsified or encapsulated in liposomes for enhanced adjuvant effect, as discussed above under pharmaceutically acceptable carriers.

The immunogenic compositions are conventionally administered parenterally, e.g., by injection, either subcutaneously or intramuscularly. Additional formulations suitable for other modes of administration include oral and pulmonary formulations, suppositories, and transdermal and transcutaneous applications. Dosage treatment may be a single dose schedule or a multiple dose schedule. The vaccine may be administered in conjunction with other immunoregulatory agents.

As an alternative to protein-based vaccines, DNA vaccination may be employed (e.g., Robinson & Torres (1997) *Seminars in Immunology* 9:271-283; Donnelly *et al.* (1997) *Annu Rev Immunol* 15:617-648).

Gene Delivery Vehicles

Gene therapy vehicles for delivery of constructs, including a coding sequence of a therapeutic of the invention, to be delivered to the mammal for expression in the mammal, can be administered either locally or systemically. These constructs can utilize viral or non-viral vector approaches in *in vivo* or *ex vivo* modality. Expression of such coding sequence can be induced using endogenous mammalian or heterologous promoters. Expression of the coding sequence in vivo can be either constitutive or regulated.

The invention includes gene delivery vehicles capable of expressing the contemplated nucleic acid sequences. The gene delivery vehicle is preferably a viral vector and, more preferably, a retroviral, adenoviral, adeno-associated viral (AAV), herpes viral, or alphavirus vector. The viral vector can also be an astrovirus, coronavirus, orthomyxovirus, papovavirus,

paramyxovirus, parvovirus, picornavirus, poxvirus, or togavirus viral vector. See generally, Jolly (1994) *Cancer Gene Therapy* 1:51-64; Kimura (1994) *Human Gene Therapy* 5:845-852; Connelly (1995) *Human Gene Therapy* 6:185-193; and Kaplitt (1994) *Nature Genetics* 6:148-153.

Retroviral vectors are well known in the art, including B, C and D type retroviruses, xenotropic retroviruses (for example, NZB-X1, NZB-X2 and NZB9-1 (see O'Neill (1985) *J. Virol.* 53:160) polytropic retroviruses e.g., MCF and MCF-MLV (see Kelly (1983) *J. Virol.* 45:291), spumaviruses and lentiviruses. See RNA Tumor Viruses, Second Edition, Cold Spring Harbor Laboratory, 1985.

Portions of the retroviral gene therapy vector may be derived from different retroviruses. For example, retrovector LTRs may be derived from a Murine Sarcoma Virus, a tRNA binding site from a Rous Sarcoma Virus, a packaging signal from a Murine Leukemia Virus, and an origin of second strand synthesis from an Avian Leukosis Virus.

These recombinant retroviral vectors may be used to generate transduction competent retroviral vector particles by introducing them into appropriate packaging cell lines (see US patent 5,591,624). Retrovirus vectors can be constructed for site-specific integration into host cell DNA by incorporation of a chimeric integrase enzyme into the retroviral particle (see WO96/37626). It is preferable that the recombinant viral vector is a replication defective recombinant virus.

Packaging cell lines suitable for use with the above-described retrovirus vectors are well known in the art, are readily prepared (see WO95/30763 and WO92/05266), and can be used to create producer cell lines (also termed vector cell lines or "VCLs") for the production of recombinant vector particles. Preferably, the packaging cell lines are made from human parent cells (e.g., HT1080 cells) or mink parent cell lines, which eliminates inactivation in human serum.

Preferred retroviruses for the construction of retroviral gene therapy vectors include Avian Leukosis Virus, Bovine Leukemia, Virus, Murine Leukemia Virus, Mink-Cell Focus-Inducing Virus, Murine Sarcoma Virus, Reticuloendotheliosis Virus and Rous Sarcoma Virus. Particularly preferred Murine Leukemia Viruses include 4070A and 1504A (Hartley and Rowe (1976) *J Virol* 19:19-25), Abelson (ATCC No. VR-999), Friend (ATCC No. VR-245), Graffi, Gross (ATCC Nol VR-590), Kirsten, Harvey Sarcoma Virus and

Rauscher (ATCC No. VR-998) and Moloney Murine Leukemia Virus (ATCC No. VR-190). Such retroviruses may be obtained from depositories or collections such as the American Type Culture Collection ("ATCC") in Rockville, Maryland or isolated from known sources using commonly available techniques.

Exemplary known retroviral gene therapy vectors employable in this invention include those described in patent applications GB2200651, EP0415731, EP0345242, EP0334301, WO89/02468; WO89/05349, WO89/09271, WO90/02806, WO90/07936, WO94/03622, WO93/25698, WO93/25234, WO93/11230, WO93/10218, WO91/02805, WO91/02825, WO95/07994, US 5,219,740, US 4,405,712, US 4,861,719, US 4,980,289, US 4,777,127, US 5,591,624. See also Vile (1993) *Cancer Res* 53:3860-3864; Vile (1993) *Cancer Res* 53:962-967; Ram (1993) *Cancer Res* 53 (1993) 83-88; Takamiya (1992) *J Neurosci Res* 33:493-503; Baba (1993) *J Neurosurg* 79:729-735; Mann (1983) *Cell* 33:153; Cane (1984) *Proc Natl Acad Sci* 81:6349; and Miller (1990) *Human Gene Therapy* 1.

Human adenoviral gene therapy vectors are also known in the art and employable in this invention. See, for example, Berkner (1988) *Biotechniques* 6:616 and Rosenfeld (1991) *Science* 252:431, and WO93/07283, WO93/06223, and WO93/07282. Exemplary known adenoviral gene therapy vectors employable in this invention include those described in the above referenced documents and in WO94/12649, WO93/03769, WO93/19191, WO94/28938, WO95/11984, WO95/00655, WO95/27071, WO95/29993, WO95/34671, WO96/05320, WO94/08026, WO94/11506, WO93/06223, WO94/24299, WO95/14102, WO95/24297, WO95/02697, WO94/28152, WO94/24299, WO95/09241, WO95/25807, WO95/05835, WO94/18922 and WO95/09654. Alternatively, administration of DNA linked to killed adenovirus as described in Curiel (1992) *Hum. Gene Ther.* 3:147-154 may be employed. The gene delivery vehicles of the invention also include adenovirus associated virus (AAV) vectors. Leading and preferred examples of such vectors for use in this invention are the AAV-2 based vectors disclosed in Srivastava, WO93/09239. Most preferred AAV vectors comprise the two AAV inverted terminal repeats in which the native D-sequences are modified by substitution of nucleotides, such that at least 5 native nucleotides and up to 18 native nucleotides, preferably at least 10 native nucleotides up to 18 native nucleotides, most preferably 10 native nucleotides are retained and the remaining nucleotides of the D-sequence arc deleted or replaced with non-native nucleotides. The native

D-sequences of the AAV inverted terminal repeats are sequences of 20 consecutive nucleotides in each AAV inverted terminal repeat (i.e., there is one sequence at each end) which are not involved in HP formation. The non-native replacement nucleotide may be any nucleotide other than the nucleotide found in the native D-sequence in the same position. Other employable exemplary AAV vectors are pWP-19, pWN-1, both of which are disclosed in Nahreini (1993) *Gene* 124:257-262. Another example of such an AAV vector is psub201 (see Samulski (1987) *J. Virol.* 61:3096). Another exemplary AAV vector is the Double-D ITR vector. Construction of the Double-D ITR vector is disclosed in US Patent 5,478,745. Still other vectors are those disclosed in Carter US Patent 4,797,368 and Muzyczka US Patent 5,139,941, Chartejee US Patent 5,474,935, and Kotin WO94/288157. Yet a further example of an AAV vector employable in this invention is SSV9AFABTKneo, which contains the AFP enhancer and albumin promoter and directs expression predominantly in the liver. Its structure and construction are disclosed in Su (1996) *Human Gene Therapy* 7:463-470. Additional AAV gene therapy vectors are described in US 5,354,678, US 5,173,414, US 5,139,941, and US 5,252,479.

The gene therapy vectors comprising sequences of the invention also include herpes vectors. Leading and preferred examples are herpes simplex virus vectors containing a sequence encoding a thymidine kinase polypeptide such as those disclosed in US 5,288,641 and EP0176170 (Roizman). Additional exemplary herpes simplex virus vectors include HFEM/ICP6-LacZ disclosed in WO95/04139 (Wistar Institute), pHSVlac described in Geller (1988) *Science* 241:1667-1669 and in WO90/09441 and WO92/07945, HSV Us3::pgC-lacZ described in Fink (1992) *Human Gene Therapy* 3:11-19 and HSV 7134, 2 RH 105 and GAL4 described in EP 0453242 (Breakefield), and those deposited with the ATCC as accession numbers ATCC VR-977 and ATCC VR-260.

Also contemplated are alpha virus gene therapy vectors that can be employed in this invention. Preferred alpha virus vectors are Sindbis viruses vectors. Togaviruses, Semliki Forest virus (ATCC VR-67; ATCC VR-1247), Middleberg virus (ATCC VR-370), Ross River virus (ATCC VR-373; ATCC VR-1246), Venezuelan equine encephalitis virus (ATCC VR923; ATCC VR-1250; ATCC VR-1249; ATCC VR-532), and those described in US patents 5,091,309, 5,217,879, and WO92/10578. More particularly, those alpha virus vectors described in U.S. Serial No. 08/405,627, filed March 15, 1995,WO94/21792, WO92/10578,

WO95/07994, US 5,091,309 and US 5,217,879 are employable. Such alpha viruses may be obtained from depositories or collections such as the ATCC in Rockville, Maryland or isolated from known sources using commonly available techniques. Preferably, alphavirus vectors with reduced cytotoxicity are used (see USSN 08/679640).

DNA vector systems such as eukarytic layered expression systems are also useful for expressing the nucleic acids of the invention. SeeWO95/07994 for a detailed description of eukaryotic layered expression systems. Preferably, the eukaryotic layered expression systems of the invention are derived from alphavirus vectors and most preferably from Sindbis viral vectors.

Other viral vectors suitable for use in the present invention include those derived from poliovirus, for example ATCC VR-58 and those described in Evans, Nature 339 (1989) 385 and Sabin (1973) *J. Biol. Standardization* 1:115; rhinovirus, for example ATCC VR-1110 and those described in Arnold (1990) *J Cell Biochem* L401; pox viruses such as canary pox virus or vaccinia virus, for example ATCC VR-111 and ATCC VR-2010 and those described in Fisher-Hoch (1989) *Proc Natl Acad Sci* 86:317; Flexner (1989) *Ann NY Acad Sci* 569:86, Flexner (1990) *Vaccine* 8:17; in US 4,603,112 and US 4,769,330 and WO89/01973; SV40 virus, for example ATCC VR-305 and those described in Mulligan (1979) *Nature* 277:108 and Madzak (1992) *J Gen Virol* 73:1533; influenza virus, for example ATCC VR-797 and recombinant influenza viruses made employing reverse genetics techniques as described in US 5,166,057 and in Enami (1990) *Proc Natl Acad Sci* 87:3802-3805; Enami & Palese (1991) *J Virol* 65:2711-2713 and Luytjes (1989) *Cell* 59:110, (see also McMichael (1983) *NEJ Med* 309:13, and Yap (1978) *Nature* 273:238 and Nature (1979) 277:108); human immunodeficiency virus as described in EP-0386882 and in Buchschacher (1992) *J. Virol.* 66:2731; measles virus, for example ATCC VR-67 and VR-1247 and those described in EP-0440219; Aura virus, for example ATCC VR-368; Bebaru virus, for example ATCC VR-600 and ATCC VR-1240; Cabassou virus, for example ATCC VR-922; Chikungunya virus, for example ATCC VR-64 and ATCC VR-1241; Fort Morgan Virus, for example ATCC VR-924; Getah virus, for example ATCC VR-369 and ATCC VR-1243; Kyzylagach virus, for example ATCC VR-927; Mayaro virus, for example ATCC VR-66; Mucambo virus, for example ATCC VR-580 and ATCC VR-1244; Ndumu virus, for example ATCC VR-371; Pixuna virus, for example ATCC VR-372 and ATCC VR-1245; Tonate virus, for example

ATCC VR-925; Triniti virus, for example ATCC VR-469; Una virus, for example ATCC VR-374; Whataroa virus, for example ATCC VR-926; Y-62-33 virus, for example ATCC VR-375; O'Nyong virus, Eastern encephalitis virus, for example ATCC VR-65 and ATCC VR-1242; Western encephalitis virus, for example ATCC VR-70, ATCC VR-1251, ATCC VR-622 and ATCC VR-1252; and coronavirus, for example ATCC VR-740 and those described in Hamre (1966) *Proc Soc Exp Biol Med* 121:190.

Delivery of the compositions of this invention into cells is not limited to the above mentioned viral vectors. Other delivery methods and media may be employed such as, for example, nucleic acid expression vectors, polycationic condensed DNA linked or unlinked to killed adenovirus alone, for example see US Serial No. 08/366,787, filed December 30, 1994 and Curiel (1992) *Hum Gene Ther* 3:147-154 ligand linked DNA, for example see Wu (1989) *J Biol Chem* 264:16985-16987, eucaryotic cell delivery vehicles cells, for example see US Serial No.08/240,030, filed May 9, 1994, and US Serial No. 08/404,796, deposition of photopolymerized hydrogel materials, hand-held gene transfer particle gun, as described in US Patent 5,149,655, ionizing radiation as described in US5,206,152 and in WO92/11033, nucleic charge neutralization or fusion with cell membranes. Additional approaches are described in Philip (1994) *Mol Cell Biol* 14:2411-2418 and in Woffendin (1994) *Proc Natl Acad Sci* 91:1581-1585.

Particle mediated gene transfer may be employed, for example see US Serial No. 60/023,867. Briefly, the sequence can be inserted into conventional vectors that contain conventional control sequences for high level expression, and then incubated with synthetic gene transfer molecules such as polymeric DNA-binding cations like polylysine, protamine, and albumin, linked to cell targeting ligands such as asialoorosomucoid, as described in Wu & Wu (1987) *J. Biol. Chem.* 262:4429-4432, insulin as described in Hucked (1990) *Biochem Pharmacol* 40:253-263, galactose as described in Plank (1992) *Bioconjugate Chem* 3:533-539, lactose or transferrin.

Naked DNA may also be employed to transform a host cell. Exemplary naked DNA introduction methods are described in WO 90/11092 and US 5,580,859. Uptake efficiency may be improved using biodegradable latex beads. DNA coated latex beads are efficiently transported into cells after endocytosis initiation by the beads. The method may be improved

further by treatment of the beads to increase hydrophobicity and thereby facilitate disruption of the endosome and release of the DNA into the cytoplasm.

Liposomes that can act as gene delivery vehicles are described in U.S. 5,422,120, WO95/13796, WO94/23697, WO91/14445 and EP-524,968. As described in USSN. 60/023,867, on non-viral delivery, the nucleic acid sequences encoding a polypeptide can be inserted into conventional vectors that contain conventional control sequences for high level expression, and then be incubated with synthetic gene transfer molecules such as polymeric DNA-binding cations like polylysine, protamine, and albumin, linked to cell targeting ligands such as asialoorosomucoid, insulin, galactose, lactose, or transferrin. Other delivery systems include the use of liposomes to encapsulate DNA comprising the gene under the control of a variety of tissue-specific or ubiquitously-active promoters. Further non-viral delivery suitable for use includes mechanical delivery systems such as the approach described in Woffendin *et al* (1994) *Proc. Natl. Acad. Sci. USA* 91(24):11581-11585. Moreover, the coding sequence and the product of expression of such can be delivered through deposition of photopolymerized hydrogel materials. Other conventional methods for gene delivery that can be used for delivery of the coding sequence include, for example, use of hand-held gene transfer particle gun, as described in U.S. 5,149,655; use of ionizing radiation for activating transferred gene, as described in U.S. 5,206,152 and WO92/11033

Exemplary liposome and polycationic gene delivery vehicles are those described in US 5,422,120 and 4,762,915; inWO 95/13796; WO94/23697; and WO91/14445; in EP-0524968; and in Stryer, Biochemistry, pages 236-240 (1975) W.H. Freeman, San Francisco; Szoka (1980) *Biochem Biophys Acta* 600:1; Bayer (1979) *Biochem Biophys Acta* 550:464; Rivnay (1987) *Meth Enzymol* 149:119; Wang (1987) *Proc Natl Acad Sci* 84:7851; Plant (1989) *Anal Biochem* 176:420.

A polynucleotide composition can comprise a therapeutically effective amount of a gene therapy vehicle, as the term is defined above. For purposes of the present invention, an effective dose will be from about 0.01 mg/ kg to 50 mg/kg or 0.05 mg/kg to about 10 mg/kg of the DNA constructs in the individual to which it is administered.

Delivery Methods

Once formulated, the polynucleotide compositions of the invention can be administered (1) directly to the subject; (2) delivered ex vivo, to cells derived from the subject; or (3) in vitro for expression of recombinant proteins. The subjects to be treated can be mammals or birds. Also, human subjects can be treated.

Direct delivery of the compositions will generally be accomplished by injection, either subcutaneously, intraperitoneally, transdermally or transcutaneously, intravenously or intramuscularly or delivered to the interstitial space of a tissue. The compositions can also be administered into a tumor or lesion. Other modes of administration include oral and pulmonary administration, suppositories, and transdermal applications, needles, and gene guns or hyposprays. Dosage treatment may be a single dose schedule or a multiple dose schedule. See WO98/20734.

Methods for the *ex vivo* delivery and reimplantation of transformed cells into a subject are known in the art and described in e.g., WO93/14778. Examples of cells useful in ex vivo applications include, for example, stem cells, particularly hematopoetic, lymph cells, macrophages, dendritic cells, or tumor cells.

Generally, delivery of nucleic acids for both *ex vivo* and *in vitro* applications can be accomplished by the following procedures, for example, dextran-mediated transfection, calcium phosphate precipitation, polybrene mediated transfection, protoplast fusion, electroporation, encapsulation of the polynucleotide(s) in liposomes, and direct microinjection of the DNA into nuclei, all well known in the art.

Polynucleotide and Polypeptide pharmaceutical compositions

In addition to the pharmaceutically acceptable carriers and salts described above, the following additional agents can be used with polynucleotide and/or polypeptide compositions.

A. Polypeptides

One example are polypeptides which include, without limitation: asialoorosomucoid (ASOR); transferrin; asialoglycoproteins; antibodies; antibody fragments; ferritin; interleukins; interferons, granulocyte, macrophage colony stimulating factor (GM-CSF),

granulocyte colony stimulating factor (G-CSF), macrophage colony stimulating factor (M-CSF), stem cell factor and erythropoietin. Viral antigens, such as envelope proteins, can also be used. Also, proteins from other invasive organisms, such as the 17 amino acid peptide from the circumsporozoite protein of plasmodium falciparum known as RII.

B. Hormones, Vitamins, Etc.

Other groups that can be included in a pharmaceutical composition include, for example: hormones, steroids, androgens, estrogens, thyroid hormone, or vitamins, folic acid.

C. Polyalkylenes, Polysaccharides, *etc.*

Also, polyalkylene glycol can be included in a pharmaceutical compositions with the desired polynucleotides and/or polypeptides. In a preferred embodiment, the polyalkylene glycol is polyethlylene glycol. In addition, mono-, di-, or polysaccarides can be included. In a preferred embodiment of this aspect, the polysaccharide is dextran or DEAE-dextran. Also, chitosan and poly(lactide-co-glycolide) may be included in a pharmaceutical composition.

D. Lipids, and Liposomes

The desired polynucleotide or polypeptide can also be encapsulated in lipids or packaged in liposomes prior to delivery to the subject or to cells derived therefrom.

Lipid encapsulation is generally accomplished using liposomes which are able to stably bind or entrap and retain nucleic acid or polypeptide. The ratio of condensed polynucleotide to lipid preparation can vary but will generally be around 1:1 (mg DNA:micromoles lipid), or more of lipid. For a review of the use of liposomes as carriers for delivery of nucleic acids, see, Hug and Sleight (1991) *Biochim. Biophys. Acta.* 1097:1-17; Straubinger (1983) *Meth. Enzymol.* 101:512-527.

Liposomal preparations for use in the present invention include cationic (positively charged), anionic (negatively charged) and neutral preparations. Cationic liposomes have been shown to mediate intracellular delivery of plasmid DNA (Felgner (1987) *Proc. Natl. Acad. Sci. USA* 84:7413-7416); mRNA (Malone (1989) *Proc. Natl. Acad. Sci. USA* 86:6077-6081); and purified transcription factors (Debs (1990) *J. Biol. Chem.* 265:10189-10192), in functional form.

Cationic liposomes are readily available. For example, N(1-2,3-dioleyloxy)propyl)-N,N,N-triethylammonium (DOTMA) liposomes are available under the trademark Lipofectin, from GIBCO BRL, Grand Island, NY. (See, also, Felgner *supra*). Other commercially available liposomes include transfectace (DDAB/DOPE) and DOTAP/DOPE (Boerhinger). Other cationic liposomes can be prepared from readily available materials using techniques well known in the art. See, e.g., Szoka (1978) *Proc. Natl. Acad. Sci. USA* 75:4194-4198; WO90/11092 for a description of the synthesis of DOTAP (1,2-bis(oleoyloxy)-3-(trimethylammonio)propane) liposomes.

Similarly, anionic and neutral liposomes are readily available, such as from Avanti Polar Lipids (Birmingham, AL), or can be easily prepared using readily available materials. Such materials include phosphatidyl choline, cholesterol, phosphatidyl ethanolamine, dioleoylphosphatidyl choline (DOPC), dioleoylphosphatidyl glycerol (DOPG), dioleoylphoshatidyl ethanolamine (DOPE), among others. These materials can also be mixed with the DOTMA and DOTAP starting materials in appropriate ratios. Methods for making liposomes using these materials are well known in the art.

The liposomes can comprise multilammelar vesicles (MLVs), small unilamellar vesicles (SUVs), or large unilamellar vesicles (LUVs). The various liposome-nucleic acid complexes are prepared using methods known in the art. See e.g., Straubinger (1983) *Meth. Immunol.* 101:512-527; Szoka (1978) *Proc. Natl. Acad. Sci. USA* 75:4194-4198; Papahadjopoulos (1975) *Biochim. Biophys. Acta* 394:483; Wilson (1979) *Cell* 17:77); Deamer & Bangham (1976) *Biochim. Biophys. Acta* 443:629; Ostro (1977) *Biochem. Biophys. Res. Commun.* 76:836; Fraley (1979) *Proc. Natl. Acad. Sci. USA* 76:3348); Enoch & Strittmatter (1979) *Proc. Natl. Acad. Sci. USA* 76:145; Fraley (1980) *J. Biol. Chem.* (1980) 255:10431; Szoka & Papahadjopoulos (1978) *Proc. Natl. Acad. Sci. USA* 75:145; and Schaefer-Ridder (1982) *Science* 215:166.

E. Lipoproteins

In addition, lipoproteins can be included with the polynucleotide or polypeptide to be delivered. Examples of lipoproteins to be utilized include: chylomicrons, HDL, IDL, LDL, and VLDL. Mutants, fragments, or fusions of these proteins can also be used. Also, modifications of naturally occurring lipoproteins can be used, such as acetylated LDL. These

lipoproteins can target the delivery of polynucleotides to cells expressing lipoprotein receptors. Preferably, if lipoproteins are including with the polynucleotide to be delivered, no other targeting ligand is included in the composition.

Naturally occurring lipoproteins comprise a lipid and a protein portion. The protein portion are known as apoproteins. At the present, apoproteins A, B, C, D, and E have been isolated and identified. At least two of these contain several proteins, designated by Roman numerals, AI, AII, AIV; CI, CII, CIII.

A lipoprotein can comprise more than one apoprotein. For example, naturally occurring chylomicrons comprises of A, B, C, and E; over time these lipoproteins lose A and acquire C and E apoproteins. VLDL comprises A, B, C, and E apoproteins, LDL comprises apoprotein B; and HDL comprises apoproteins A, C, and E.

The amino acid sequences of these apoproteins are known and are described in, for example, Breslow (1985) *Annu Rev. Biochem* 54:699; Law (1986) *Adv. Exp Med. Biol.* 151:162; Chen (1986) *J Biol Chem* 261:12918; Kane (1980) *Proc Natl Acad Sci USA* 77:2465; and Utermann (1984) *Hum Genet* 65:232.

Lipoproteins contain a variety of lipids including, triglycerides, cholesterol (free and esters), and phopholipids. The composition of the lipids varies in naturally occurring lipoproteins. For example, chylomicrons comprise mainly triglycerides. A more detailed description of the lipid content of naturally occurring lipoproteins can be found, for example, in *Meth. Enzymol.* 128 (1986). The composition of the lipids are chosen to aid in conformation of the apoprotein for receptor binding activity. The composition of lipids can also be chosen to facilitate hydrophobic interaction and association with the polynucleotide binding molecule.

Naturally occurring lipoproteins can be isolated from serum by ultracentrifugation, for instance. Such methods are described in *Meth. Enzymol.* (*supra*); Pitas (1980) *J. Biochem.* 255:5454-5460 and Mahey (1979) *J Clin. Invest* 64:743-750.

Lipoproteins can also be produced by *in vitro* or recombinant methods by expression of the apoprotein genes in a desired host cell. See, for example, Atkinson (1986) *Annu Rev Biophys Chem* 15:403 and Radding (1958) *Biochim Biophys Acta* 30: 443.

Lipoproteins can also be purchased from commercial suppliers, such as Biomedical Techniologies, Inc., Stoughton, Massachusetts, USA.

Further description of lipoproteins can be found in Zuckermann et al., PCT. Appln. No. US97/14465.

F. Polycationic Agents

Polycationic agents can be included, with or without lipoprotein, in a composition with the desired polynucleotide and/or polypeptide to be delivered.

Polycationic agents, typically, exhibit a net positive charge at physiological relevant pH and are capable of neutralizing the electrical charge of nucleic acids to facilitate delivery to a desired location. These agents have both in vitro, ex vivo, and in vivo applications. Polycationic agents can be used to deliver nucleic acids to a living subject either intramuscularly, subcutaneously, etc.

The following are examples of useful polypeptides as polycationic agents: polylysine, polyarginine, polyornithine, and protamine. Other examples of useful polypeptides include histones, protamines, human serum albumin, DNA binding proteins, non-histone chromosomal proteins, coat proteins from DNA viruses, such as ΦX174, transcriptional factors also contain domains that bind DNA and therefore may be useful as nucleic aid condensing agents. Briefly, transcriptional factors such as C/CEBP, c-jun, c-fos, AP-1, AP-2, AP-3, CPF, Prot-1, Sp-1, Oct-1, Oct-2, CREP, and TFIID contain basic domains that bind DNA sequences.

Organic polycationic agents include: spermine, spermidine, and purtrescine.

The dimensions and of the physical properties of a polycationic agent can be extrapolated from the list above, to construct other polypeptide polycationic agents or to produce synthetic polycationic agents.

G. Synthetic Polycationic Agents

Synthetic polycationic agents which are useful in pharmaceutical compositions include, for example, DEAE-dextran, polybrene. Lipofectin™, and lipofectAMINE™ are monomers that form polycationic complexes when combined with polynucleotides or polypeptides.

Immunodiagnostic Assays

Neisseria MenB antigens, or antigenic fragments thereof, of the invention can be used in immunoassays to detect antibody levels (or, conversely, anti-*Neisseria* MenB antibodies can be used to detect antigen levels). Immunoassays based on well defined, recombinant antigens can be developed to replace invasive diagnostics methods. Antibodies to *Neisseria* MenB proteins or fragments thereof within biological samples, including for example, blood or serum samples, can be detected. Design of the immunoassays is subject to a great deal of variation, and a variety of these are known in the art. Protocols for the immunoassay may be based, for example, upon competition, or direct reaction, or sandwich type assays. Protocols may also, for example, use solid supports, or may be by immunoprecipitation. Most assays involve the use of labeled antibody or polypeptide; the labels may be, for example, fluorescent, chemiluminescent, radioactive, or dye molecules. Assays which amplify the signals from the probe are also known; examples of which are assays which utilize biotin and avidin, and enzyme-labeled and mediated immunoassays, such as ELISA assays.

Kits suitable for immunodiagnosis and containing the appropriate labeled reagents are constructed by packaging the appropriate materials, including the compositions of the invention, in suitable containers, along with the remaining reagents and materials (for example, suitable buffers, salt solutions, *etc.*) required for the conduct of the assay, as well as suitable set of assay instructions.

Nucleic Acid Hybridization

"Hybridization" refers to the association of two nucleic acid sequences to one another by hydrogen bonding. Typically, one sequence will be fixed to a solid support and the other will be free in solution. Then, the two sequences will be placed in contact with one another under conditions that favor hydrogen bonding. Factors that affect this bonding include: the type and volume of solvent; reaction temperature; time of hybridization; agitation; agents to block the non-specific attachment of the liquid phase sequence to the solid support (Denhardt's reagent or BLOTTO); concentration of the sequences; use of compounds to increase the rate of association of sequences (dextran sulfate or polyethylene glycol); and the

stringency of the washing conditions following hybridization. See Sambrook *et al.* (*supra*) Volume 2, chapter 9, pages 9.47 to 9.57.

"Stringency" refers to conditions in a hybridization reaction that favor association of very similar sequences over sequences that differ. For example, the combination of temperature and salt concentration should be chosen that is approximately 120 to 200°C below the calculated Tm of the hybrid under study. The temperature and salt conditions can often be determined empirically in preliminary experiments in which samples of genomic DNA immobilized on filters are hybridized to the sequence of interest and then washed under conditions of different stringencies. See Sambrook *et al.* at page 9.50.

Variables to consider when performing, for example, a Southern blot are (1) the complexity of the DNA being blotted and (2) the homology between the probe and the sequences being detected. The total amount of the fragment(s) to be studied can vary a magnitude of 10, from 0.1 to 1μg for a plasmid or phage digest to 10^{-9} to 10^{-8} g for a single copy gene in a highly complex eukaryotic genome. For lower complexity polynucleotides, substantially shorter blotting, hybridization, and exposure times, a smaller amount of starting polynucleotides, and lower specific activity of probes can be used. For example, a single-copy yeast gene can be detected with an exposure time of only 1 hour starting with 1 μg of yeast DNA, blotting for two hours, and hybridizing for 4-8 hours with a probe of 10^8 cpm/μg. For a single-copy mammalian gene a conservative approach would start with 10 μg of DNA, blot overnight, and hybridize overnight in the presence of 10% dextran sulfate using a probe of greater than 10^8 cpm/μg, resulting in an exposure time of ~24 hours.

Several factors can affect the melting temperature (Tm) of a DNA-DNA hybrid between the probe and the fragment of interest, and consequently, the appropriate conditions for hybridization and washing. In many cases the probe is not 100% homologous to the fragment. Other commonly encountered variables include the length and total G+C content of the hybridizing sequences and the ionic strength and formamide content of the hybridization buffer. The effects of all of these factors can be approximated by a single equation:

$Tm = 81 + 16.6(\log_{10}Ci) + 0.4(\%(G + C)) - 0.6(\%formamide) - 600/n - 1.5(\%mismatch)$

where Ci is thc salt concentration (monovalent ions) and *n* is the length of the hybrid in base pairs (slightly modified from Meinkoth & Wahl (1984) *Anal. Biochem.* 138:267-284).

In designing a hybridization experiment, some factors affecting nucleic acid hybridization can be conveniently altered. The temperature of the hybridization and washes and the salt concentration during the washes are the simplest to adjust. As the temperature of the hybridization increases (i.e., stringency), it becomes less likely for hybridization to occur between strands that are nonhomologous, and as a result, background decreases. If the radiolabeled probe is not completely homologous with the immobilized fragment (as is frequently the case in gene family and interspecies hybridization experiments), the hybridization temperature must be reduced, and background will increase. The temperature of the washes affects the intensity of the hybridizing band and the degree of background in a similar manner. The stringency of the washes is also increased with decreasing salt concentrations.

In general, convenient hybridization temperatures in the presence of 50% formamide are 42°C for a probe with is 95% to 100% homologous to the target fragment, 37°C for 90% to 95% homology, and 32°C for 85% to 90% homology. For lower homologies, formamide content should be lowered and temperature adjusted accordingly, using the equation above. If the homology between the probe and the target fragment are not known, the simplest approach is to start with both hybridization and wash conditions which are nonstringent. If non-specific bands or high background are observed after autoradiography, the filter can be washed at high stringency and reexposed. If the time required for exposure makes this approach impractical, several hybridization and/or washing stringencies should be tested in parallel.

Nucleic Acid Probe Assays

Methods such as PCR, branched DNA probe assays, or blotting techniques utilizing nucleic acid probes according to the invention can determine the presence of cDNA or mRNA. A probe is said to "hybridize" with a sequence of the invention if it can form a duplex or double stranded complex, which is stable enough to be detected.

The nucleic acid probes will hybridize to the Neisserial nucleotide sequences of the invention (including both sense and antisense strands). Though many different nucleotide sequences will encode the amino acid sequence, the native Neisserial sequence is preferred because it is the actual sequence present in cells. mRNA represents a coding sequence and so

a probe should be complementary to the coding sequence; single-stranded cDNA is complementary to mRNA, and so a cDNA probe should be complementary to the non-coding sequence.

The probe sequence need not be identical to the Neisserial sequence (or its complement) -- some variation in the sequence and length can lead to increased assay sensitivity if the nucleic acid probe can form a duplex with target nucleotides, which can be detected. Also, the nucleic acid probe can include additional nucleotides to stabilize the formed duplex. Additional Neisserial sequence may also be helpful as a label to detect the formed duplex. For example, a non-complementary nucleotide sequence may be attached to the 5' end of the probe, with the remainder of the probe sequence being complementary to a Neisserial sequence. Alternatively, non-complementary bases or longer sequences can be interspersed into the probe, provided that the probe sequence has sufficient complementarity with the a Neisserial sequence in order to hybridize therewith and thereby form a duplex which can be detected.

The exact length and sequence of the probe will depend on the hybridization conditions, such as temperature, salt condition and the like. For example, for diagnostic applications, depending on the complexity of the analyte sequence, the nucleic acid probe typically contains at least 10-20 nucleotides, preferably 15-25, and more preferably at least 30 nucleotides, although it may be shorter than this. Short primers generally require cooler temperatures to form sufficiently stable hybrid complexes with the template.

Probes may be produced by synthetic procedures, such as the triester method of Matteucci *et al.* (*J. Am. Chem. Soc.* (1981) 103:3185), or according to Urdea *et al.* (*Proc. Natl. Acad. Sci. USA* (1983) 80: 7461), or using commercially available automated oligonucleotide synthesizers.

The chemical nature of the probe can be selected according to preference. For certain applications, DNA or RNA are appropriate. For other applications, modifications may be incorporated e.g., backbone modifications, such as phosphorothioates or methylphosphonates, can be used to increase *in vivo* half-life, alter RNA affinity, increase nuclease resistance *etc.* (e.g., see Agrawal & Iyer (1995) *Curr Opin Biotechnol* 6:12-19; Agrawal (1996) *TIBTECH* 14:376-387); analogues such as peptide nucleic acids may also be

used (e.g., see Corey (1997) *TIBTECH* 15:224-229; Buchardt *et al.* (1993) *TIBTECH* 11:384-386).

One example of a nucleotide hybridization assay is described by Urdea *et al.* in international patent application WO92/02526 (see also U.S. Patent 5,124,246).

Alternatively, the polymerase chain reaction (PCR) is another well-known means for detecting small amounts of target nucleic acids. The assay is described in: Mullis *et al.* (*Meth. Enzymol.* (1987) 155: 335-350); US patent 4,683,195; and US patent 4,683,202. Two "primer" nucleotides hybridize with the target nucleic acids and are used to prime the reaction. The primers can comprise sequence that does not hybridize to the sequence of the amplification target (or its complement) to aid with duplex stability or, for example, to incorporate a convenient restriction site. Typically, such sequence will flank the desired Neisserial sequence.

A thermostable polymerase creates copies of target nucleic acids from the primers using the original target nucleic acids as a template. After a threshold amount of target nucleic acids are generated by the polymerase, they can be detected by more traditional methods, such as Southern blots. When using the Southern blot method, the labeled probe will hybridize to the Neisserial sequence (or its complement).

Also, mRNA or cDNA can be detected by traditional blotting techniques described in Sambrook *et al* (*supra*). mRNA, or cDNA generated from mRNA using a polymerase enzyme, can be purified and separated using gel electrophoresis. The nucleic acids on the gel are then blotted onto a solid support, such as nitrocellulose. The solid support is exposed to a labeled probe and then washed to remove any unhybridized probe. Next, the duplexes containing the labeled probe are detected. Typically, the probe is labeled with a radioactive moiety.

EXAMPLES

The invention is based on the 961 nucleotide sequences from the genome of *N. meningitidis* set out in Appendix C, SEQ ID NOs:1-961 of the '573 application, which together represent substantially the complete genome of serotype B of *N. meningitidis*, as well as the full length genome sequence shown in Appendix D, SEQ ID NO 1068 of the '573

application, and the full length genome sequence shown in Appendix A hereto, SEQ ID NO. 1.

It will be self-evident to the skilled person how this sequence information can be utilized according to the invention, as above described.

The standard techniques and procedures which may be employed in order to perform the invention (*e.g.* to utilize the disclosed sequences to predict polypeptides useful for vaccination or diagnostic purposes) were summarized above. This summary is not a limitation on the invention but, rather, gives examples that may be used, but are not required.

These sequences are derived from contigs shown in Appendix C (SEQ ID NOs 1-961) and from the full length genome sequence shown in Appendix D (SEQ ID NO 1068), which were prepared during the sequencing of the genome of *N. meningitidis* (strain B). The full length sequence was assembled using the TIGR Assembler as described by G.S. Sutton et al., *TIGR Assembler: A New Tool for Assembling Large Shotgun Sequencing Projects*, Genome Science and Technology, 1:9-19 (1995) [*see also* R. D. Fleischmann, et al., Science 269, 496-512 (1995); C. M. Fraser, et al., Science 270, 397-403 (1995); C. J. Bult, et al., Science 273, 1058-73 (1996); C. M. Fraser, et. al, Nature 390, 580-586 (1997); J.-F. Tomb, et. al., Nature 388, 539-547 (1997); H. P. Klenk, et al., Nature 390, 364-70 (1997); C. M. Fraser, et al., Science 281, 375-88 (1998); M. J. Gardner, et al., Science 282, 1126-1132 (1998); K. E. Nelson, et al., Nature 399, 323-9 (1999)]. Then, using the above-described methods, putative translation products of the sequences were determined. Computer analysis of the translation products were determined based on database comparisons. Corresponding gene and protein sequences, if any, were identified in Neisseria meningitidis (Strain A) and Neisseria gonorrhoeae. Then the proteins were expressed, purified, and characterized to assess their antigenicity and immunogenicity.

In particular, the following methods were used to express, purify, and biochemically characterize the proteins of the invention.

Chromosomal DNA Preparation

N. meningitidis strain 2996 was grown to exponential phase in 100 ml of GC medium, harvested by centrifugation, and resuspended in 5 ml buffer (20% Sucrose, 50 mM Tris-HCl, 50 mM EDTA, adjusted to pH 8.0). After 10 minutes incubation on ice, the bacteria were

lysed by adding 10 ml lysis solution (50 mM NaCl, 1% Na-Sarkosyl, 50 µg/ml Proteinase K), and the suspension was incubated at 37°C for 2 hours. Two phenol extractions (equilibrated to pH 8) and one $ChCl_3$/isoamylalcohol (24:1) extraction were performed. DNA was precipitated by addition of 0.3M sodium acetate and 2 volumes ethanol, and was collected by centrifugation. The pellet was washed once with 70% ethanol and redissolved in 4 ml buffer (10 mM Tris-HCl, 1mM EDTA, pH 8). The DNA concentration was measured by reading the OD at 260 nm.

Oligonucleotide design

Synthetic oligonucleotide primers were designed on the basis of the coding sequence of each ORF, using (a) the meningococcus B sequence when available, or (b) the gonococcus/meningococcus A sequence, adapted to the codon preference usage of meningococcus. Any predicted signal peptides were omitted, by deducing the 5'-end amplification primer sequence immediately downstream from the predicted leader sequence.

For most ORFs, the 5' primers included two restriction enzyme recognition sites (*BamH*I-*Nde*I, *BamH*I-*Nhe*I, or *EcoR*I-*Nhe*I, depending on the gene's restriction pattern); the 3' primers included a *Xho*I restriction site. This procedure was established in order to direct the cloning of each amplification product (corresponding to each ORF) into two different expression systems: pGEX-KG (using either *BamH*I-*Xho*I or *EcoR*I-*Xho*I), and pET21b+ (using either *Nde*I-*Xho*I or *Nhe*I-*Xho*I).

5'-end primer tail:	CGCGGATCCCATATG	(*BamH*I-*Nde*I)
	CGCGGATCCGCTAGC	(*BamH*I-*Nhe*I)
	CCGGAATTCTAGCTAGC	(*EcoR*I-*Nhe*I)
3'-end primer tail:	CCCGCTCGAG	(*Xho*I)

For some ORFs, two different amplifications were performed to clone each ORF in the two expression systems. Two different 5' primers were used for each ORF; the same 3' *Xho*I primer was used as before:

5'-end primer tail:	GGAATTCCATATGGCCATGG	(*Nde*I)
5'-end primer tail:	CGGGATCC	(*BamH*I)

Other ORFs were cloned in the pTRC expression vector and expressed as an amino-terminus His-tag fusion. The predicted signal peptide may be included in the final product. *Nhe*I-*BamH*I restriction sites were incorporated using primers:

5'-end primer tail: GATCAGCTAGCCATATG (*Nhe*I)

3'-end primer tail: CGGGATCC (*BamH*I)

As well as containing the restriction enzyme recognition sequences, the primers included nucleotides which hybridizeed to the sequence to be amplified. The number of hybridizing nucleotides depended on the melting temperature of the whole primer, and was determined for each primer using the formulae:

$T_m = 4\,(G+C) + 2\,(A+T)$ (tail excluded)

$T_m = 64.9 + 0.41\,(\%\,GC) - 600/N$ (whole primer)

The average melting temperature of the selected oligos were 65-70°C for the whole oligo and 50-55°C for the hybridising region alone.

Oligos were synthesized by a Perkin Elmer 394 DNA/RNA Synthesizer, eluted from the columns in 2 ml NH_4-OH, and deprotected by 5 hours incubation at 56 °C. The oligos were precipitated by addition of 0.3M Na-Acetate and 2 volumes ethanol. The samples were then centrifuged and the pellets resuspended in either 100µl or 1ml of water. OD_{260} was determined using a Perkin Elmer Lambda Bio spectophotometer and the concentration was determined and adjusted to 2-10 pmol/µl.

Table 1 shows the forward and reverse primers used for each amplification. In certain cases, it might be noted that the sequence of the primer does not exactly match the sequence in the ORF. When initial amplifications are performed, the complete 5' and/or 3' sequence may not be known for some meningococcal ORFs, although the corresponding sequences may have been identified in gonoccus. For amplification, the gonococcal sequences could thus be used as the basis for primer design, altered to take account of codon preference. In particular, the following codons may be changed: ATA→ATT; TCG→TCT; CAG→CAA; AAG→AAA; GAG→GAA; CGA and CGG→CGC; GGG→GGC.

Amplification

The standard PCR protocol was as follows: 50-200 ng of genomic DNA were used as a template in the presence of 20-40 µM of each oligo, 400-800 µM dNTPs solution, 1x PCR

buffer (including 1.5 mM $MgCl_2$), 2.5 units *TaqI* DNA polymerase (using Perkin-Elmer AmpliTaQ, GIBCO Platinum, Pwo DNA polymerase, or Tahara Shuzo Taq polymerase).

In some cases, PCR was optimsed by the addition of 10µl DMSO or 50 µl 2M betaine.

After a hot start (adding the polymerase during a preliminary 3 minute incubation of the whole mix at 95°C), each sample underwent a double-step amplification: the first 5 cycles were performed using as the hybridization temperature the one of the oligos excluding the restriction enzymes tail, followed by 30 cycles performed according to the hybridization temperature of the whole length oligos. The cycles were followed by a final 10 minute extension step at 72°C.

The standard cycles were as follows:

	Denaturation	**Hybridisation**	**Elongation**
First 5 cycles	30 seconds 95°C	30 seconds 50-55°C	30-60 seconds 72°C
Last 30 cycles	30 seconds 95°C	30 seconds 65-70°C	30-60 seconds 72°C

The elongation time varied according to the length of the ORF to be amplified.

The amplifications were performed using either a 9600 or a 2400 Perkin Elmer GeneAmp PCR System. To check the results, 1/10 of the amplification volume was loaded onto a 1-1.5% agarose gel and the size of each amplified fragment compared with a DNA molecular weight marker.

The amplified DNA was either loaded directly on a 1% agarose gel or first precipitated with ethanol and resuspended in a suitable volume to be loaded on a 1% agarose gel. The DNA fragment corresponding to the right size band was then eluted and purified from gel, using the Qiagen Gel Extraction Kit, following the instructions of the manufacturer. The final volume of the DNA fragment was 30µl or 50µl of either water or 10mM Tris, pH 8.5.

Digestion of PCR fragments

The purified DNA corresponding to the amplified fragment was split into 2 aliquots and double-digested with:

NdeI/*Xho*I or *NheI/Xho*I for cloning into pET-21b+ and further expression of the protein as a C-terminus His-tag fusion

BamHI/*Xho*I or *EcoRI/Xho*I for cloning into pGEX-KG and further expression of the protein as a GST N-terminus fusion.

For ORF 76, *NheI/BamH*I for cloning into pTRC-HisA vector and further expression of the protein as N-terminus His-tag fusion.

Each purified DNA fragment was incubated (37°C for 3 hours to overnight) with 20 units of each restriction enzyme (New England Biolabs) in a either 30 or 40 μl final volume in the presence of the appropriate buffer. The digestion product was then purified using the QIAquick PCR purification kit, following the manufacturer's instructions, and eluted in a final volume of 30 (or 50) μl of either water or 10mM Tris-HCl, pH 8.5. The final DNA concentration was determined by 1% agarose gel electrophoresis in the presence of titrated molecular weight marker.

Digestion of the cloning vectors (pET22B, pGEX-KG and pTRC-His A)

10 μg plasmid was double-digested with 50 units of each restriction enzyme in 200 μl reaction volume in the presence of appropriate buffer by overnight incubation at 37°C. After loading the whole digestion on a 1% agarose gel, the band corresponding to the digested vector was purified from the gel using the Qiagen QIAquick Gel Extraction Kit and the DNA was eluted in 50 μl of 10 mM Tris-HCl, pH 8.5. The DNA concentration was evaluated by measuring OD_{260} of the sample, and adjusted to 50 μg/μl. 1 μl of plasmid was used for each cloning procedure.

Cloning

The fragments corresponding to each ORF, previously digested and purified, were ligated in both pET22b and pGEX-KG. In a final volume of 20 μl, a molar ratio of 3:1 fragment/vector was ligated using 0.5 μl of NEB T4 DNA ligase (400 units/μl), in the presence of the buffer supplied by the manufacturer. The reaction was incubated at room temperature for 3 hours. In some experiments, ligation was performed using the Boheringer "Rapid Ligation Kit", following the manufacturer's instructions.

In order to introduce the recombinant plasmid in a suitable strain, 100 μl *E. coli* DH5 competent cells were incubated with the ligase reaction solution for 40 minutes on ice, then at 37°C for 3 minutes, then, after adding 800 μl LB broth, again at 37°C for 20 minutes. The cells were then centrifuged at maximum speed in an Eppendorf microfuge and resuspended in approximately 200 μl of the supernatant. The suspension was then plated on LB ampicillin (100 mg/ml).

The screening of the recombinant clones was performed by growing 5 randomly-chosen colonies overnight at 37 °C in either 2 ml (pGEX or pTC clones) or 5ml (pET clones) LB broth + 100 μg/ml ampicillin. The cells were then pelletted and the DNA extracted using the Qiagen QIAprep Spin Miniprep Kit, following the manufacturer's instructions, to a final volume of 30 μl. 5 μl of each individual miniprep (approximately 1g) were digested with either *NdeI/XhoI* or *BamHI/XhoI* and the whole digestion loaded onto a 1-1.5% agarose gel (depending on the expected insert size), in parallel with the molecular weight marker (1Kb DNA Ladder, GIBCO). The screening of the positive clones was made on the base of the correct insert size.

Cloning

Certain ORFs may be cloned into the pGEX-HIS vector using *EcoRI-PstI*, *EcoRI-SalI*, or *SalI-PstI* cloning sites. After cloning, the recombinant plasmids may be introduced in the *E.*coli host W3110.

Expression

Each ORF cloned into the expression vector may then be transformed into the strain suitable for expression of the recombinant protein product. 1 μl of each construct was used to transform 30 μl of *E.coli* BL21 (pGEX vector), *E.coli* TOP 10 (pTRC vector) or *E.coli* BL21-DE3 (pET vector), as described above. In the case of the pGEX-His vector, the same *E.coli* strain (W3110) was used for initial cloning and expression. Single recombinant colonies were inoculated into 2ml LB+Amp (100 μg/ml), incubated at 37°C overnight, then diluted 1:30 in 20 ml of LB+Amp (100 μg/ml) in 100 ml flasks, making sure that the OD_{600} ranged between 0.1 and 0.15. The flasks were incubated at 30°C into gyratory water bath shakers until OD indicated exponential growth suitable for induction of expression (0.4-0.8 OD for

pET and pTRC vectors; 0.8-1 OD for pGEX and pGEX-His vectors). For the pET, pTRC and pGEX-His vectors, the protein expression was induced by addiction of 1mM IPTG, whereas in the case of pGEX system the final concentration of IPTG was 0.2 mM. After 3 hours incubation at 30°C, the final concentration of the sample was checked by OD. In order to check expression, 1ml of each sample was removed, centrifuged in a microfuge, the pellet resuspended in PBS, and analysed by 12% SDS-PAGE with Coomassie Blue staining. The whole sample was centrifuged at 6000*g* and the pellet resuspended in PBS for further use.

GST-fusion proteins large-scale purification.

A single colony was grown overnight at 37°C on LB+Amp agar plate. The bacteria were inoculated into 20 ml of LB+Amp liquid colture in a water bath shaker and grown overnight. Bacteria were diluted 1:30 into 600 ml of fresh medium and allowed to grow at the optimal temperature (20-37°C) to OD_{550} 0.8-1. Protein expression was induced with 0.2mM IPTG followed by three hours incubation. The culture was centrifuged at 8000 rpm at 4°C. The supernatant was discarded and the bacterial pellet was resuspended in 7.5 ml cold PBS. The cells were disrupted by sonication on ice for 30 sec at 40W using a Branson sonifier B-15, frozen and thawed two times and centrifuged again. The supernatant was collected and mixed with 150μl Glutatione-Sepharose 4B resin (Pharmacia) (previously washed with PBS) and incubated at room temperature for 30 minutes. The sample was centrifuged at 700*g* for 5 minutes at 4C. The resin was washed twice with 10 ml cold PBS for 10 minutes, resuspended in 1ml cold PBS, and loaded on a disposable column. The resin was washed twice with 2ml cold PBS until the flow-through reached OD_{280} of 0.02-0.06. The GST-fusion protein was eluted by addition of 700μl cold Glutathione elution buffer 10mM reduced glutathione, 50mM Tris-HCl) and fractions collected until the OD_{280} was 0.1. 21μl of each fraction were loaded on a 12% SDS gel using either Biorad SDS-PAGE Molecular weight standard broad range (M1) (200, 116.25, 97.4, 66.2, 45, 31, 21.5, 14.4, 6.5 kDa) or Amersham Rainbow Marker (M") (220, 66, 46, 30, 21.5, 14.3 kDa) as standards. As the MW of GST is 26kDa, this value must be added to the MW of each GST-fusion protein.

His-fusion soluble proteins large-scale purification.

A single colony was grown overnight at 37°C on a LB + Amp agar plate. The bacteria were inoculated into 20ml of LB+Amp liquid culture and incubated overnight in a water bath shaker. Bacteria were diluted 1:30 into 600ml fresh medium and allowed to grow at the optimal temperature (20-37°C) to OD_{550} 0.6-0.8. Protein expression was induced by addition of 1 mM IPTG and the culture further incubated for three hours. The culture was centrifuged at 8000 rpm at 4°C, the supernatant was discarded and the bacterial pellet was resuspended in 7.5ml cold 10mM imidazole buffer (300 mM NaCl, 50 mM phosphate buffer, 10 mM imidazole, pH 8). The cells were disrupted by sonication on ice for 30 sec at 40W using a Branson sonifier B-15, frozen and thawed two times and centrifuged again. The supernatant was collected and mixed with 150μl Ni^{2+}-resin (Pharmacia) (previously washed with 10mM imidazole buffer) and incubated at room temperature with gentle agitation for 30 minutes. The sample was centrifuged at 700g for 5 minutes at 4°C. The resin was washed twice with 10 ml cold 10mM imidazole buffer for 10 minutes, resuspended in 1ml cold 10mM imidazole buffer and loaded on a disposable column. The resin was washed at 4°C with 2ml cold 10mM imidazole buffer until the flow-through reached the $O.D_{280}$ of 0.02-0.06. The resin was washed with 2ml cold 20mM imidazole buffer (300 mM NaCl, 50 mM phosphate buffer, 20 mM imidazole, pH 8) until the flow-through reached the $O.D_{280}$ of 0.02-0.06. The His-fusion protein was eluted by addition of 700μl cold 250mM imidazole buffer (300 mM NaCl, 50 mM phosphate buffer, 250 mM imidazole, pH 8) and fractions collected until the $O.D_{280}$ was 0.1. 21μl of each fraction were loaded on a 12% SDS gel.

His-fusion insoluble proteins large-scale purification.

A single colony was grown overnight at 37 °C on a LB + Amp agar plate. The bacteria were inoculated into 20 ml of LB+Amp liquid culture in a water bath shaker and grown overnight. Bacteria were diluted 1:30 into 600ml fresh medium and let to grow at the optimal temperature (37°C) to $O.D_{550}$ 0.6-0.8. Protein expression was induced by addition of 1 mM IPTG and the culture further incubated for three hours. The culture was centrifuged at 8000rpm at 4°C. The supernatant was discarded and the bacterial pellet was resuspended in 7.5 ml buffer B (urea 8M, 10mM Tris-HCl, 100mM phosphate buffer, pH 8.8). The cells were disrupted by sonication on ice for 30 sec at 40W using a Branson sonifier B-15, frozen

and thawed twice and centrifuged again. The supernatant was stored at -20°C, while the pellets were resuspended in 2 ml guanidine buffer (6M guanidine hydrochloride, 100mM phosphate buffer, 10 mM Tris-HCl, pH 7.5) and treated in a homogenizer for 10 cycles. The product was centrifuged at 13000 rpm for 40 minutes. The supernatant was mixed with 150µl Ni^{2+}-resin (Pharmacia) (previously washed with buffer B) and incubated at room temperature with gentle agitation for 30 minutes. The sample was centrifuged at 700 g for 5 minutes at 4°C. The resin was washed twice with 10 ml buffer B for 10 minutes, resuspended in 1ml buffer B, and loaded on a disposable column. The resin was washed at room temperature with 2ml buffer B until the flow-through reached the OD_{280} of 0.02-0.06. The resin was washed with 2ml buffer C (urea 8M, 10mM Tris-HCl, 100mM phosphate buffer, pH 6.3) until the flow-through reached the $O.D_{280}$ of 0.02-0.06. The His-fusion protein was eluted by addition of 700µl elution buffer (urea 8M, 10mM Tris-HCl, 100mM phosphate buffer, pH 4.5) and fractions collected until the OD_{280} was 0.1. 21µl of each fraction were loaded on a 12% SDS gel.

His-fusion proteins renaturation

10% glycerol was added to the denatured proteins. The proteins were then diluted to 20µg/ml using dialysis buffer I (10% glycerol, 0.5M arginine, 50mM phosphate buffer, 5mM reduced glutathione, 0.5mM oxidised glutathione, 2M urea, pH 8.8) and dialysed against the same buffer at 4°C for 12-14 hours. The protein was further dialysed against dialysis buffer II (10% glycerol, 0.5M arginine, 50mM phosphate buffer, 5mM reduced glutathione, 0.5mM oxidised glutathione, pH 8.8) for 12-14 hours at 4°C. Protein concentration was evaluated using the formula:

$$\text{Protein (mg/ml)} = (1.55 \times OD_{280}) - (0.76 \times OD_{260})$$

Mice immunisations

20µg of each purified protein were used to immunise mice intraperitoneally. In the case of some ORFs, Balb-C mice were immunised with $Al(OH)_3$ as adjuvant on days 1, 21 and 42, and immune response was monitored in samples taken on day 56. For other ORFs, CD1 mice could be immunised using the same protocol. For other ORFs, CD1 mice could be immunised using Freund's adjuvant, and the same immunisation protocol was used, except that the immune response was measured on day 42, rather than 56. Similarly, for still other

ORFs, CD1 mice could be immunised with Freund's adjuvant, but the immune response was measured on day 49.

ELISA assay (sera analysis)

The acapsulated MenB M7 strain was plated on chocolate agar plates and incubated overnight at 37°C. Bacterial colonies were collected from the agar plates using a sterile dracon swab and inoculated into 7ml of Mueller-Hinton Broth (Difco) containing 0.25% Glucose. Bacterial growth was monitored every 30 minutes by following OD_{620}. The bacteria were let to grow until the OD reached the value of 0.3-0.4. The culture was centrifuged for 10 minutes at 10000 rpm. The supernatant was discarded and bacteria were washed once with PBS, resuspended in PBS containing 0.025% formaldehyde, and incubated for 2 hours at room temperature and then overnight at 4°C with stirring. 100μl bacterial cells were added to each well of a 96 well Greiner plate and incubated overnight at 4°C. The wells were then washed three times with PBT washing buffer (0.1% Tween-20 in PBS). 200 μl of saturation buffer (2.7% Polyvinylpyrrolidone 10 in water) was added to each well and the plates incubated for 2 hours at 37°C. Wells were washed three times with PBT. 200 μl of diluted sera (Dilution buffer: 1% BSA, 0.1% Tween-20, 0.1% NaN_3 in PBS) were added to each well and the plates incubated for 90 minutes at 37°C. Wells were washed three times with PBT. 100 μl of HRP-conjugated rabbit anti-mouse (Dako) serum diluted 1:2000 in dilution buffer were added to each well and the plates were incubated for 90 minutes at 37°C. Wells were washed three times with PBT buffer. 100 μl of substrate buffer for HRP (25 ml of citrate buffer pH5, 10 mg of O-phenildiamine and 10 μl of H_2O) were added to each well and the plates were left at room temperature for 20 minutes. 100 μl H_2SO_4 was added to each well and OD_{490} was followed. The ELISA was considered positive when OD490 was 2.5 times the respective pre-immune sera.

FACScan bacteria Binding Assay procedure.

The acapsulated MenB M7 strain was plated on chocolate agar plates and incubated overnight at 37°C. Bacterial colonies were collected from the agar plates using a sterile dracon swab and inoculated into 4 tubes containing 8ml each Mueller-Hinton Broth (Difco) containing 0.25% glucose. Bacterial growth was monitored every 30 minutes by following

OD_{620}. The bacteria were let to grow until the OD reached the value of 0.35-0.5. The culture was centrifuged for 10 minutes at 4000 rpm. The supernatant was discarded and the pellet was resuspended in blocking buffer (1% BSA, 0.4% NaN_3) and centrifuged for 5 minutes at 4000 rpm. Cells were resuspended in blocking buffer to reach OD_{620} of 0.07. 100μl bacterial cells were added to each well of a Costar 96 well plate. 100μl of diluted (1:200) sera (in blocking buffer) were added to each well and plates incubated for 2 hours at 4°C. Cells were centrifuged for 5 minutes at 4000 rpm, the supernatant aspirated and cells washed by addition of 200μl/well of blocking buffer in each well. 100μl of R-Phicoerytrin conjugated $F(ab)_2$ goat anti-mouse, diluted 1:100, was added to each well and plates incubated for 1 hour at 4°C. Cells were spun down by centrifugation at 4000rpm for 5 minutes and washed by addition of 200μl/well of blocking buffer. The supernatant was aspirated and cells resuspended in 200μl/well of PBS, 0.25% formaldehyde. Samples were transferred to FACScan tubes and read. The condition for FACScan setting were: FL1 on, FL2 and FL3 off; FSC-H Treshold:92; FSC PMT Voltage: E 02; SSC PMT: 474; Amp. Gains 7.1; FL-2 PMT: 539. Compensation values: 0.

OMV preparations

Bacteria were grown overnight on 5 GC plates, harvested with a loop and resuspended in 10 ml 20mM Tris-HCl. Heat inactivation was performed at 56°C for 30 minutes and the bacteria disrupted by sonication for 10' on ice (50% duty cycle, 50% output). Unbroken cells were removed by centrifugation at 5000*g* for 10 minutes and the total cell envelope fraction recovered by centrifugation at 50000*g* at 4°C for 75 minutes. To extract cytoplasmic membrane proteins from the crude outer membranes, the whole fraction was resuspended in 2% sarkosyl (Sigma) and incubated at room temperature for 20 minutes. The suspension was centrifuged at 10000*g* for 10 minutes to remove aggregates, and the supernatant further ultracentrifuged at 50000*g* for 75 minutes to pellet the outer membranes. The outer membranes were resuspended in 10mM Tris-HCl, pH8 and the protein concentration measured by the Bio-Rad Protein assay, using BSA as a standard.

Whole Extracts preparation

Bacteria were grown overnight on a GC plate, harvested with a loop and resuspended in 1ml of 20mM Tris-HCl. Heat inactivation was performed at 56°C for 30' minutes.

Western blotting

Purified proteins (500ng/lane), outer membrane vesicles (5 μg) and total cell extracts (25μg) derived from MenB strain 2996 were loaded on 15% SDS-PAGE and transferred to a nitrocellulose membrane. The transfer was performed for 2 hours at 150mA at 4°C, in transferring buffer (0.3 % Tris base, 1.44 % glycine, 20% methanol). The membrane was saturated by overnight incubation at 4°C in saturation buffer (10% skimmed milk, 0.1% Triton X100 in PBS). The membrane was washed twice with washing buffer (3% skimmed milk, 0.1% Triton X100 in PBS) and incubated for 2 hours at 37°C with 1:200 mice sera diluted in washing buffer. The membrane was washed twice and incubated for 90 minutes with a 1:2000 dilution of horseradish peroxidase labeled anti-mouse Ig. The membrane was washed twice with 0.1% Triton X100 in PBS and developed with the Opti-4CN Substrate Kit (Bio-Rad). The reaction was stopped by adding water.

Bactericidal assay

MC58 strain was grown overnight at 37°C on chocolate agar plates. 5-7 colonies were collected and used to inoculate 7ml Mueller-Hinton broth. The suspension was incubated at 37°C on a nutator and let to grow until OD_{620} was in between 0.5-0.8. The culture was aliquoted into sterile 1.5ml Eppendorf tubes and centrifuged for 20 minutes at maximum speed in a microfuge. The pellet was washed once in Gey's buffer (Gibco) and resuspended in the same buffer to an OD_{620} of 0.5, diluted 1:20000 in Gey's buffer and stored at 25°C.

50μl of Gey's buffer/1% BSA was added to each well of a 96-well tissue culture plate. 25μl of diluted (1:100) mice sera (dilution buffer: Gey's buffer/0.2% BSA) were added to each well and the plate incubated at 4°C. 25μl of the previously described bacterial suspension were added to each well. 25μl of either heat-inactivated (56°C waterbath for 30 minutes) or normal baby rabbit complement were added to each well. Immediately after the addition of the baby rabbit complement, 22μl of each sample/well were plated on Mueller-

Hinton agar plates (time 0). The 96-well plate was incubated for 1 hour at 37°C with rotation and then 22µl of each sample/well were plated on Mueller-Hinton agar plates (time 1). After overnight incubation the colonies corresponding to time 0 and time 1h were counted.

The following DNA and amino acid sequences are identified by titles of the following form: [g, m, or a] [#].[seq or pep], where "g" means a sequence from *N. gonorrhoeae*, "m" means a sequence from *N. meningitidis B*, and "a" means a sequence from *N. meningitidis A*; "#" means the number of the sequence; "seq" means a DNA sequence, and "pep" means an amino acid sequence. For example, "g001.seq" refers to an *N. gonorrohoeae* DNA sequence, number 1. The presence of the suffix "-1" or "-2" to these sequences indicates an additional sequence found for the same ORF. Further, open reading frames are identified as ORF #, where "#" means the number of the ORF, corresponding to the number of the sequence which encodes the ORF, and the ORF designations may be suffixed with ".ng" or ".a", indicating that the ORF corresponds to a *N. gonorrhoeae* sequence or a *N. meningitidis A* sequence, respectively. Computer analysis was performed for the comparisons that follow between "g", "m", and "a" peptide sequences; and therein the "pep" suffix is implied where not expressly stated.

EXAMPLE 1

The following ORFs were predicted from the contig sequences and/or the full length sequences using the methods herein described.

Localization of the ORFs

ORF: contig:

279 gnm4.seq

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 2>:
m279.seq

```
  1  ATAACGCGGA TTTGCGGCTG CTTGATTTCA ACGGTTTTCA GGGCTTCGGC
 51  AAGTTTGTCG GCGGCGGGTT TCATCAGGCT GCAATGGGAA GGTACGGACA
101  CGGGCAGCGG CAGGGCGCGT TTGGCACCGG CTTCTTTGGC GGCAGCCATG
151  GCGCGTCCGA CGGCGGCGGC GTTGCCTGCA ATCACGATTT GTCCGGGTGA
201  GTTGAAGTTG ACGGCTTCGA CCACTTCGCT TTGGGCGGCT TCGGCACAAA
251  TGGCTTTAAC CTGCTCATCT TCCAAGCCGA GAATCGCCGC CATTGCGCCC
301  ACGCCTTGCG GTACGGCGGA CTGCATCAGT TCGGCGCGCA GGCGCACGAG
351  TTTGACCGCG TCGGCAAAAT TCAATGCGCC GGCGGCAACG AGTGCGGTGT
401  ATTCGCCGAG GCTGTGTCCG GCAACGGCGG CAGGCGTTTT GCCGCCCGCT
451  TCTAAATAG
```

This corresponds to the amino acid sequence <SEQ ID 3; ORF 279>:

m279.pep

```
  1  ITRICGCLIS TVFRASASLS AAGFIRLQWE GTDTGSGRAR LAPASLAAAM
 51  ARPTAAALPA ITICPGELKL TASTTSLWAA SAQMALTCSS SKPRIAAIAP
101  TPCGTADCIS SARRRTSLTA SAKFNAPAAT SAVYSPRLCP ATAAGVLPPA
151  SK*
```

The following partial DNA sequence was identified in *N.gonorrhoeae* <SEQ ID 4>:

g279.seq

```
  1  atgacgcgga tttgcggctg cttgatttca acggttttga gtgtttcggc
 51  aagtttgtcg gcggcgggtt tcatcaggct gcaatgggaa ggaacggata
101  ccggcagcgg cagggcgcgt ttggctccgg cttctttggc ggcagccatg
151  gtgcgtccga cggcggcggc gttgcctgca atcacgactt gtccgggcga
201  gttgaagttg acggcttcga ccacttcgcc ctgtgcggat tcggcacaaa
251  tctgcctgac ctgttcatct tccaaaccca aaatggccgc cattgcgcct
301  acgccttgcg gtacggcgga ctgcatcagt tcggcgcgca ggcggacgag
351  tttgacggca tcggcaaaat ccaatgcttc ggcggcgaca agcgcggtgt
401  attcgccgag gctgtgtccg gcaacggcgg caggcgtttt gccgcccact
451  tccaaatag
```

This corresponds to the amino acid sequence <SEQ ID 5; ORF 279.ng>:

g279.pep

```
  1  MTRICGCLIS TVLSVSASLS AAGFIRLQWE GTDTGSGRAR LAPASLAAAM
 51  VRPTAAALPA ITTCPGELKL TASTTSPCAD SAQICLTCSS SKPKMAAIAP
101  TPCGTADCIS SARRRTSLTA SAKSNASAAT SAVYSPRLCP ATAAGVLPPT
151  SK*
```

ORF 279 shows 89.5% identity over a 152 aa overlap with a predicted ORF (ORF 279.ng) from *N. gonorrhoeae:*

```
                    10        20        30        40        50        60
m279.pep    ITRICGCLISTVFRASASLSAAGFIRLQWEGTDTGSGRARLAPASLAAAMARPTAAALPA
            :|||||||||||: :|||||||||||||||||||||||||||||||||||:|||||||||
g279        MTRICGCLISTVLSVSASLSAAGFIRLQWEGTDTGSGRARLAPASLAAAMVRPTAAALPA
                    10        20        30        40        50        60

                    70        80        90       100       110       120
m279.pep    ITICPGELKLTASTTSLWAASAQMALTCSSSKPRIAAIAPTPCGTADCISSARRRTSLTA
            || |||||||||||||  | |||: ||||||||::|||||||||||||||||||||||||
g279        ITTCPGELKLTASTTSPCADSAQICLTCSSSKPKMAAIAPTPCGTADCISSARRRTSLTA
                    70        80        90       100       110       120

                   130       140       150
m279.pep    SAKFNAPAATSAVYSPRLCPATAAGVLPPASKX
            ||| || ||||||||||||||||||||||:|||
g279        SAKSNASAATSAVYSPRLCPATAAGVLPPTSKX
                   130       140       150
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 6>:

a279.seq

```
  1  ATGACNCNGA TTTGCGGCTG CTTGATTTCA ACGGTTTNNA GGGCTTCGGC
 51  GAGTTTGTCG GCGGCGGGTT TCATGAGGCT GCAATGGGAA GGTACNGACA
101  CNGGCAGCGG CAGGGCGCGT TTGGCGCCGG CTTCTTTGGC GGCAAGCATA
151  GCGCGCTCGA CGGCGGCGGC ATTGCCTGCA ATCACGACTT GTCCGGGCGA
201  GTTGAAGTTG ACGGCTTCAA CCACTTCATC CTGTGCGGAT TCGGCGCAAA
251  TTTGTTTTAC CTGTTCATCT TCCAAGCCGA GAATCGCCGC CATTGCGCCC
301  ACGCCTTGCG GTACGGCGGA CTGCATCAGT TCGGCGCGCA NGCGCACGAG
351  TTTGACCGCG TCGGCAAAAT CCAATGCGCC GGCGGCAACN AGTGCGGTGT
```

```
401  ATTCGCCGAN GCTGTGTCCG GCAACGGCGG CAGGCGTTTT GCCGCCCGCT
451  TCCGAATAG
```

This corresponds to the amino acid sequence <SEQ ID 7; ORF 279.a>:

```
a279.pep
  1  MTXICGCLIS TVXRASASLS AAGFMRLQWE GTDTGSGRAR LAPASLAASI
 51  ARSTAAALPA ITTCPGELKL TASTTSSCAD SAQICFTCSS SKPRIAAIAP
101  TPCGTADCIS SARXRTSLTA SAKSNAPAAT SAVYSPXLCP ATAAGVLPPA
151  SE*
```

m279/a279 ORFs 279 and 279.a showed a 88.2% identity in 152 aa overlap

```
                   10        20        30        40        50        60
m279.pep    ITRICGCLISTVFRASASLSAAGFIRLQWEGTDTGSGRARLAPASLAAAMARPTAAALPA
            :| ||||||||| ||||||||||:|||||||||||||||||||||||||::|| |||||||
a279        MTXICGCLISTVXRASASLSAAGFMRLQWEGTDTGSGRARLAPASLAASIARSTAAALPA
                   10        20        30        40        50        60

                   70        80        90       100       110       120
m279.pep    ITICPGELKLTASTTSLWAASAQMALTCSSSKPRIAAIAPTPCGTADCISSARRRTSLTA
            || ||||||||||||   | |||: :||||||||||||||||||||||||||| ||||||
a279        ITTCPGELKLTASTTSSCADSAQICFTCSSSKPRIAAIAPTPCGTADCISSARXRTSLTA
                   70        80        90       100       110       120

                  130       140       150
m279.pep    SAKFNAPAATSAVYSPRLCPATAAGVLPPASKX
            ||| |||||||||||| ||||||||||||||:|
a279        SAKSNAPAATSAVYSPXLCPATAAGVLPPASEX
                  130       140       150
```

519 and 519-1 gnm7.seq

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 8>:

```
m519.seq  (partial)
  1  ..TCCGTTATCG GGCGTATGGA GTTGGACAAA ACGTTTGAAG AACGCGACGA
 51    AATCAACAGT ACTGTTGTTG CGGCTTTGGA CGAGGCGGCC GGGgCTTgGG
101    GTGTGAAGGT TTTGCGTTAT GAGATTAAAG ACTTGGTTCC GCCGCAAGAA
151    ATCCTTCGCT CAATGCAGGC GCAAATTACT GCCGAACGCG AAAAACGCGC
201    CCGTATCGCC GAATCCGAAG GTCGTAAAAT CGAACAAATC AACCTTGCCA
251    GTGGTCAGCG CGAAGCCGAA ATCCAACAAT CCGAAGGCGA GGCTCAGGCT
301    GCGGTCAATG CGTCAAATGC CGAGAAAATC GCCCGCATCA ACCGCGCCAA
351    AGGTGAAGCG GAATCCTTGC GCCTTGTTGC CGAAGCCAAT GCCGAAGCCA
401    TCCGTCAAAT TGCCGCCGCC CTTCAAACCC AAGGCGGTGC GGATGCGGTC
451    AATCTGAAGA TTGCGGAACA ATACGTCGCT GCGTTCAACA ATCTTGCCAA
501    AGAAAGCAAT ACGCTGATTA TGCCCGCCAA TGTTGCCGAC ATCGGCAGCC
551    TGATTTCTGC CGGTATGAAA ATTATCGACA GCAGCAAAAC CGCCAAaTAA
```

This corresponds to the amino acid sequence <SEQ ID 9; ORF 519>:

```
m519.pep  (partial)
  1  ..SVIGRMELDK TFEERDEINS TVVAALDEAA GAWGVKVLRY EIKDLVPPQE
 51    ILRSMQAQIT AEREKRARIA ESEGRKIEQI NLASGQREAE IQQSEGEAQA
101    AVNASNAEKI ARINRAKGEA ESLRLVAEAN AEAIRQIAAA LQTQGGADAV
151    NLKIAEQYVA AFNNLAKESN TLIMPANVAD IGSLISAGMK IIDSSKTAK*
```

The following partial DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 10>:

```
g519.seq
  1  atggaatttt tcattatctt gttggcagcc gtcgccgttt tcggcttcaa
 51  atcctttgtc gtcatccccc agcaggaagt ccacgttgtc gaaaggctcg
```

```
101  ggcgtttcca tcgcgccctg acggccggtt tgaatatttt gattcccttt
151  atcgaccgcg tcgcctaccg ccattcgctg aaagaaatcc ctttagacgt
201  acccagccag gtctgcatca cgcgcgataa tacgcaattg actgttgacg
251  gcatcatcta tttccaagta accgatccca aactcgcctc atacggttcg
301  agcaactaca ttatggcaat tacccagctt gcccaaacga cgctgcgttc
351  cgttatcggg cgtatggagt tggacaaaac gtttgaagaa cgcgacgaaa
401  tcaacagtac cgtcgtctcc gccctcgatg aagccgccgg ggcttggggt
451  gtgaaagtcc tccgttacga aatcaaggat ttggttccgc cgcaagaaat
501  ccttcgcgca atgcaggcac aaattaccgc cgaacgcgaa aaacgcgccc
551  gtattgccga atccgaaggc cgtaaaatcg aacaaatcaa ccttgccagt
601  ggtcagcgtg aagccgaaat ccaacaatcc gaaggcgagg ctcaggctgc
651  ggtcaatgcg tccaatgccg agaaaatcgc ccgcatcaac cgcgccaaag
701  gcgaagcgga atccctgcgc cttgttgccg aagccaatgc cgaagccaac
751  cgtcaaattg ccgccgccct tcaaacccaa agcggggcgg atgcggtcaa
801  tctgaagatt gcgggacaat acgttaccgc gttcaaaaat cttgccaaag
851  aagacaatac gcggattaag cccgccaagg ttgccgaaat cgggaacccct
901  aattttcggc ggcatgaaaa attttcgcca gaagcaaaaa cggccaaata
951  a
```

This corresponds to the amino acid sequence <SEQ ID 11; ORF 519.ng>:

```
g519.pep
  1  MEFFIILLAA VAVFGFKSFV VIPQQEVHVV ERLGRFHRAL TAGLNILIPF
 51  IDRVAYRHSL KEIPLDVPSQ VCITRDNTQL TVDGIIYFQV TDPKLASYGS
101  SNYIMAITQL AQTTLRSVIG RMELDKTFEE RDEINSTVVS ALDEAAGAWG
151  VKVLRYEIKD LVPPQEILRA MQAQITAERE KRARIAESEG RKIEQINLAS
201  GQREAEIQQS EGEAQAAVNA SNAEKIARIN RAKGEAESLR LVAEANAEAN
251  RQIAAALQTQ SGADAVNLKI AGQYVTAFKN LAKEDNTRIK PAKVAEIGNP
301  NFRRHEKFSP EAKTAK*
```

ORF 519 shows 87.5% identity over a 200 aa overlap with a predicted ORF (ORF 519.ng) from *N. gonorrhoeae:*

```
m519/g519

                                                      10        20        30
m519.pep                                      SVIGRMELDKTFEERDEINSTVVAALDEAA
                                              |||||||||||||||||||||||:||||||
g519            YFQVTDPKLASYGSSNYIMAITQLAQTTLRSVIGRMELDKTFEERDEINSTVVSALDEAA
                  90       100       110       120       130       140

                        40        50        60        70        80        90
m519.pep        GAWGVKVLRYEIKDLVPPQEILRSMQAQITAEREKRARIAESEGRKIEQINLASGQREAE
                |||||||||||||||||||||||:||||||||||||||||||||||||||||||||||||
g519            GAWGVKVLRYEIKDLVPPQEILRAMQAQITAEREKRARIAESEGRKIEQINLASGQREAE
                 150       160       170       180       190       200

                       100       110       120       130       140       150
m519.pep        IQQSEGEAQAAVNASNAEKIARINRAKGEAESLRLVAEANAEAIRQIAAALQTQGGADAV
                ||||||||||||||||||||||||||||||||||||||||||| ||||||||||:|||||
g519            IQQSEGEAQAAVNASNAEKIARINRAKGEAESLRLVAEANAEANRQIAAALQTQSGADAV
                 210       220       230       240       250       260

                       160       170       180       190       200
m519.pep        NLKIAEQYVAAFNNLAKESNTLIMPANVADIGSL-ISAGMKIIDSSKTAK
                ||||| |||:||:|||||:|| | ||:||:||:  :    |:   :||||
g519            NLKIAGQYVTAFKNLAKEDNTRIKPAKVAEIGNPNFRRHEKFSPEAKTAK
                 270       280       290       300       310
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 12>:

```
a519.seq
```

```
  1  ATGGAATTTT TCATTATCTT GCTGGCAGCC GTCGTTGTTT TCGGCTTCAA
 51  ATCCTTTGTT GTCATCCCAC AGCAGGAAGT CCACGTTGTC GAAAGGCTCG
101  GGCGTTTCCA TCGCGCCCTG ACGGCCGGTT TGAATATTTT GATTCCCTTT
151  ATCGACCGCG TCGCCTACCG CCATTCGCTG AAAGAAATCC CTTTAGACGT
201  ACCCAGCCAG GTCTGCATCA CGCGCGACAA TACGCAGCTG ACTGTTGACG
251  GTATCATCTA TTTCCAAGTA ACCGACCCCA AACTCGCCTC ATACGGTTCG
301  AGCAACTACA TTATGGCGAT TACCCAGCTT GCCCAAACGA CGCTGCGTTC
351  CGTTATCGGG CGTATGGAAT TGGACAAAAC GTTTGAAGAA CGCGACGAAA
401  TCAACAGCAC CGTCGTCTCC GCCCTCGATG AAGCCGCCGG AGCTTGGGGT
451  GTGAAGGTTT TGCGTTATGA GATTAAAGAC TTGGTTCCGC CGCAAGAAAT
501  CCTTCGCTCA ATGCAGGCGC AAATTACTGC TGAACGCGAA AAACGCGCCC
551  GTATCGCCGA ATCCGAAGGT CGTAAAATCG AACAAATCAA CCTTGCCAGT
601  GGTCAGCGCG AAGCCGAAAT CCAACAATCC GAAGGCGAGG CTCAGGCTGC
651  GGTCAATGCG TCAAATGCCG AGAAAATCGC CCGCATCAAC CGCGCCAAAG
701  GTGAAGCGGA ATCCTTGCGC CTTGTTGCCG AAGCCAATGC CGAAGCCATC
751  CGTCAAATTG CCGCCGCCCT TCAAACCCAA GGCGGTGCGG ATGCGGTCAA
801  TCTGAAGATT GCGGAACAAT ACGTCGCCGC GTTCAACAAT CTTGCCAAAG
851  AAAGCAATAC GCTGATTATG CCCGCCAATG TTGCCGACAT CGGCAGCCTG
901  ATTTCTGCCG GTATGAAAAT TATCGACAGC AGCAAAACCG CCAAATAA
```

This corresponds to the amino acid sequence <SEQ ID 13; ORF 519.a>:

```
a519.pep
  1  MEFFIILLAA VVVFGFKSFV VIPQQEVHVV ERLGRFHRAL TAGLNILIPF
 51  IDRVAYRHSL KEIPLDVPSQ VCITRDNTQL TVDGIIYFQV TDPKLASYGS
101  SNYIMAITQL AQTTLRSVIG RMELDKTFEE RDEINSTVVS ALDEAAGAWG
151  VKVLRYEIKD LVPPQEILRS MQAQITAERE KRARIAESEG RKIEQINLAS
201  GQREAEIQQS EGEAQAAVNA SNAEKIARIN RAKGEAESLR LVAEANAEAI
251  RQIAAALQTQ GGADAVNLKI AEQYVAAFNN LAKESNTLIM PANVADIGSL
301  ISAGMKIIDS SKTAK*
```

m519/a519 **ORFs 519 and 519.a showed a** 99.5% identity in 199 aa overlap

```
                                                      10        20        30
m519.pep                                      SVIGRMELDKTFEERDEINSTVVAALDEAA
                                              |||||||||||||||||||||||:||||||
a519            YFQVTDPKLASYGSSNYIMAITQLAQTTLRSVIGRMELDKTFEERDEINSTVVSALDEAA
                    90       100       110       120       130       140

                        40        50        60        70        80        90
m519.pep        GAWGVKVLRYEIKDLVPPQEILRSMQAQITAEREKRARIAESEGRKIEQINLASGQREAE
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a519            GAWGVKVLRYEIKDLVPPQEILRSMQAQITAEREKRARIAESEGRKIEQINLASGQREAE
                   150       160       170       180       190       200

                       100       110       120       130       140       150
m519.pep        IQQSEGEAQAAVNASNAEKIARINRAKGEAESLRLVAEANAEAIRQIAAALQTQGGADAV
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a519            IQQSEGEAQAAVNASNAEKIARINRAKGEAESLRLVAEANAEAIRQIAAALQTQGGADAV
                   210       220       230       240       250       260

                       160       170       180       190       200
m519.pep        NLKIAEQYVAAFNNLAKESNTLIMPANVADIGSLISAGMKIIDSSKTAKX
                ||||||||||||||||||||||||||||||||||||||||||||||||||
a519            NLKIAEQYVAAFNNLAKESNTLIMPANVADIGSLISAGMKIIDSSKTAKX
                   270       280       290       300       310
```

Further work revealed the following DNA sequence identified in *N. meningitidis* <SEQ ID 14>:

m519-1.seq

```
  1  ATGGAATTTT TCATTATCTT GTTGGTAGCC GTCGCCGTTT TCGGTTTCAA
 51  ATCCTTTGTT GTCATCCCAC AACAGGAAGT CCACGTTGTC GAAAGGCTGG
101  GGCGTTTCCA TCGCGCCCTG ACGGcCGGTT TGAATATTTT GATTCCCTTT
151  ATCGACCGCG TCGCCTACCG CCATTCGCTG AAAGAAATCC CTTTAGACGT
201  ACCCAGCCAG GTCTGCATCA CGCGCGACAA TACGCAGCTG ACTGTTGACG
251  GCATCATCTA TTTCCAAGTA ACCGACCCCA AACTCGCCTC ATACGGTTCG
301  AGCAACTACA TTATGGCGAT TACCCAGCTT GCCCAAACGA CGCTGCGTTC
351  CGTTATCGGG CGTATGGAGT TGGACAAAAC GTTTGAAGAA CGCGACGAAA
401  TCAACAGTAC TGTTGTTGCG GCTTTGGACG AGGCGGCCGG GGCTTGGGGT
451  GTGAAGGTTT TGCGTTATGA GATTAAAGAC TTGGTTCCGC CGCAAGAAAT
501  CCTTCGCTCA ATGCAGGCGC AAATTACTGC CGAACGCGAA AAACGCGCCC
551  GTATCGCCGA ATCCGAAGGT CGTAAAATCG AACAAATCAA CCTTGCCAGT
601  GGTCAGCGCG AAGCCGAAAT CCAACAATCC GAAGGCGAGG CTCAGGCTGC
651  GGTCAATGCG TCAAATGCCG AGAAAATCGC CCGCATCAAC CGCGCCAAAG
701  GTGAAGCGGA ATCCTTGCGC CTTGTTGCCG AAGCCAATGC CGAAGCCATC
751  CGTCAAATTG CCGCCGCCCT TCAAACCCAA GGCGGTGCGG ATGCGGTCAA
801  TCTGAAGATT GCGGAACAAT ACGTCGCTGC GTTCAACAAT CTTGCCAAAG
851  AAAGCAATAC GCTGATTATG CCCGCCAATG TTGCCGACAT CGGCAGCCTG
901  ATTTCTGCCG GTATGAAAAT TATCGACAGC AGCAAAACCG CCAAATAA
```

This corresponds to the amino acid sequence <SEQ ID 15; ORF 519-1>:

```
m519-1.
  1  MEFFIILLVA VAVFGFKSFV VIPQQEVHVV ERLGRFHRAL TAGLNILIPF
 51  IDRVAYRHSL KEIPLDVPSQ VCITRDNTQL TVDGIIYFQV TDPKLASYGS
101  SNYIMAITQL AQTTLRSVIG RMELDKTFEE RDEINSTVVA ALDEAAGAWG
151  VKVLRYEIKD LVPPQEILRS MQAQITAERE KRARIAESEG RKIEQINLAS
201  GQREAEIQQS EGEAQAAVNA SNAEKIARIN RAKGEAESLR LVAEANAEAI
251  RQIAAALQTQ GGADAVNLKI AEQYVAAFNN LAKESNTLIM PANVADIGSL
301  ISAGMKIIDS SKTAK*
```

The following DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 16>:

```
g519-1.seq
  1  ATGGAATTTT TCATTATCTT GTTGGCAGCC GTCGCCGTTT TCGGCTTCAA
 51  ATCCTTTGTC GTCATCCCCC AGCAGGAAGT CCACGTTGTC GAAAGGCTCG
101  GGCGTTTCCA TCGCGCCCTG ACGGCCGGTT TGAATATTTT GATTCCCTTT
151  ATCGACCGCG TCGCCTACCG CCATTCGCTG AAAGAAATCC CTTTAGACGT
201  ACCCAGCCAG GTCTGCATCA CGCGCGATAA TACGCAATTG ACTGTTGACG
251  GCATCATCTA TTTCCAAGTA ACCGATCCCA AACTCGCCTC ATACGGTTCG
301  AGCAACTACA TTATGGCAAT TACCCAGCTT GCCCAAACGA CGCTGCGTTC
351  CGTTATCGGG CGTATGGAGT TGGACAAAAC GTTTGAAGAA CGCGACGAAA
401  TCAACAGTAC CGTCGTCTCC GCCCTCGATG AAGCCGCCGG GGCTTGGGGT
451  GTGAAAGTCC TCCGTTACGA AATCAAGGAT TTGGTTCCGC CGCAAGAAAT
501  CCTTCGCGCA ATGCAGGCAC AAATTACCGC CGAACGCGAA AAACGCGCCC
551  GTATTGCCGA ATCCGAAGGC CGTAAAATCG AACAAATCAA CCTTGCCAGT
601  GGTCAGCGTG AAGCCGAAAT CCAACAATCC GAAGGCGAGG CTCAGGCTGC
651  GGTCAATGCG TCCAATGCCG AGAAAATCGC CCGCATCAAC CGCGCCAAAG
701  GCGAAGCGGA ATCCCTGCGC CTTGTTGCCG AAGCCAATGC CGAAGCCATC
751  CGTCAAATTG CCGCCGCCCT TCAAACCCAA GGCGGGGCGG ATGCGGTCAA
801  TCTGAAGATT GCGGAACAAT ACGTAGCCGC GTTCAACAAT CTTGCCAAAG
851  AAAGCAATAC GCTGATTATG CCCGCCAATG TTGCCGACAT CGGCAGCCTG
901  ATTTCTGCCG GCATGAAAAT TATCGACAGC AGCAAAACCG CCAAATAA
```

This corresponds to the amino acid sequence <SEQ ID 17; ORF 519-1.ng>:

```
g519-1.pep
  1  MEFFIILLAA VAVFGFKSFV VIPQQEVHVV ERLGRFHRAL TAGLNILIPF
 51  IDRVAYRHSL KEIPLDVPSQ VCITRDNTQL TVDGIIYFQV TDPKLASYGS
101  SNYIMAITQL AQTTLRSVIG RMELDKTFEE RDEINSTVVS ALDEAAGAWG
151  VKVLRYEIKD LVPPQEILRA MQAQITAERE KRARIAESEG RKIEQINLAS
201  GQREAEIQQS EGEAQAAVNA SNAEKIARIN RAKGEAESLR LVAEANAEAI
251  RQIAAALQTQ GGADAVNLKI AEQYVAAFNN LAKESNTLIM PANVADIGSL
301  ISAGMKIIDS SKTAK*
```

m519-1/g519-1 ORFs 519-1 and 519-1.ng showed a 99.0% identity in 315 aa overlap

```
                     10        20        30        40        50        60
g519-1.pep   MEFFIILLAAVAVFGFKSFVVIPQQEVHVVERLGRFHRALTAGLNILIPFIDRVAYRHSL
             ||||||||:|||||||||||||||||||||||||||||||||||||||||||||||||||
m519-1       MEFFIILLVAVAVFGFKSFVVIPQQEVHVVERLGRFHRALTAGLNILIPFIDRVAYRHSL
                     10        20        30        40        50        60

                     70        80        90       100       110       120
g519-1.pep   KEIPLDVPSQVCITRDNTQLTVDGIIYFQVTDPKLASYGSSNYIMAITQLAQTTLRSVIG
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m519-1       KEIPLDVPSQVCITRDNTQLTVDGIIYFQVTDPKLASYGSSNYIMAITQLAQTTLRSVIG
                     70        80        90       100       110       120

                    130       140       150       160       170       180
g519-1.pep   RMELDKTFEERDEINSTVVSALDEAAGAWGVKVLRYEIKDLVPPQEILRAMQAQITAERE
             |||||||||||||||||:|||||||||||||||||||||||||||||||||:||||||||
m519-1       RMELDKTFEERDEINSTVVAALDEAAGAWGVKVLRYEIKDLVPPQEILRSMQAQITAERE
                    130       140       150       160       170       180

                    190       200       210       220       230       240
g519-1.pep   KRARIAESEGRKIEQINLASGQREAEIQQSEGEAQAAVNASNAEKIARINRAKGEAESLR
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m519-1       KRARIAESEGRKIEQINLASGQREAEIQQSEGEAQAAVNASNAEKIARINRAKGEAESLR
                    190       200       210       220       230       240

                    250       260       270       280       290       300
g519-1.pep   LVAEANAEAIRQIAAALQTQGGADAVNLKIAEQYVAAFNNLAKESNTLIMPANVADIGSL
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m519-1       LVAEANAEAIRQIAAALQTQGGADAVNLKIAEQYVAAFNNLAKESNTLIMPANVADIGSL
                    250       260       270       280       290       300

                    310
g519-1.pep   ISAGMKIIDSSKTAKX
             |||||||||||||||
m519-1       ISAGMKIIDSSKTAKX
                    310
```

The following DNA sequence was identified in *N. meningitidis* <SEQ ID 18>:

```
a519-1.seq
      1  ATGGAATTTT TCATTATCTT GCTGGCAGCC GTCGTTGTTT TCGGCTTCAA
     51  ATCCTTTGTT GTCATCCCAC AGCAGGAAGT CCACGTTGTC GAAAGGCTCG
    101  GGCGTTTCCA TCGCGCCCTG ACGGCCGGTT TGAATATTTT GATTCCCTTT
    151  ATCGACCGCG TCGCCTACCG CCATTCGCTG AAAGAAATCC CTTTAGACGT
    201  ACCCAGCCAG GTCTGCATCA CGCGCGACAA TACGCAGCTG ACTGTTGACG
    251  GTATCATCTA TTTCCAAGTA ACCGACCCCA AACTCGCCTC ATACGGTTCG
    301  AGCAACTACA TTATGGCGAT TACCCAGCTT GCCCAAACGA CGCTGCGTTC
    351  CGTTATCGGG CGTATGGAAT TGGACAAAAC GTTTGAAGAA CGCGACGAAA
    401  TCAACAGCAC CGTCGTCTCC GCCCTCGATG AAGCCGCCGG AGCTTGGGGT
    451  GTGAAGGTTT TGCGTTATGA GATTAAAGAC TTGGTTCCGC CGCAAGAAAT
    501  CCTTCGCTCA ATGCAGGCGC AAATTACTGC TGAACGCGAA AAACGCGCCC
    551  GTATCGCCGA ATCCGAAGGT CGTAAAATCG AACAAATCAA CCTTGCCAGT
    601  GGTCAGCGCG AAGCCGAAAT CCAACAATCC GAAGGCGAGG CTCAGGCTGC
    651  GGTCAATGCG TCAAATGCCG AGAAAATCGC CCGCATCAAC CGCGCCAAAG
    701  GTGAAGCGGA ATCCTTGCGC CTTGTTGCCG AAGCCAATGC CGAAGCCATC
    751  CGTCAAATTG CCGCCGCCCT TCAAACCCAA GGCGGTGCGG ATGCGGTCAA
    801  TCTGAAGATT GCGGAACAAT ACGTCGCCGC GTTCAACAAT CTTGCCAAAG
    851  AAAGCAATAC GCTGATTATG CCCGCCAATG TTGCCGACAT CGGCAGCCTG
    901  ATTTCTGCCG GTATGAAAAT TATCGACAGC AGCAAAACCG CCAAATAA
```

This corresponds to the amino acid sequence <SEQ ID 19; ORF 519-1.a>:

```
a519-1.pep.
      1  MEFFIILLAA VVVFGFKSFV VIPQQEVHVV ERLGRFHRAL TAGLNILIPF
     51  IDRVAYRHSL KEIPLDVPSQ VCITRDNTQL TVDGIIYFQV TDPKLASYGS
    101  SNYIMAITQL AQTTLRSVIG RMELDKTFEE RDEINSTVVS ALDEAAGAWG
    151  VKVLRYEIKD LVPPQEILRS MQAQITAERE KRARIAESEG RKIEQINLAS
    201  GQREAEIQQS EGEAQAAVNA SNAEKIARIN RAKGEAESLR LVAEANAEAI
    251  RQIAAALQTQ GGADAVNLKI AEQYVAAFNN LAKESNTLIM PANVADIGSL
    301  ISAGMKIIDS SKTAK*
```

m519-1/a519-1 ORFs 519-1 and 519-1.a showed a 99.0% identity in 315 aa overlap

```
                      10        20        30        40        50        60
a519-1.pep     MEFFIILLAAVVVFGFKSFVVIPQQEVHVVERLGRFHRALTAGLNILIPFIDRVAYRHSL
               ||||||||:||:||||||||||||||||||||||||||||||||||||||||||||||||
m519-1         MEFFIILLVAVAVFGFKSFVVIPQQEVHVVERLGRFHRALTAGLNILIPFIDRVAYRHSL
                      10        20        30        40        50        60

                      70        80        90       100       110       120
a519-1.pep     KEIPLDVPSQVCITRDNTQLTVDGIIYFQVTDPKLASYGSSNYIMAITQLAQTTLRSVIG
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m519-1         KEIPLDVPSQVCITRDNTQLTVDGIIYFQVTDPKLASYGSSNYIMAITQLAQTTLRSVIG
                      70        80        90       100       110       120

                     130       140       150       160       170       180
a519-1.pep     RMELDKTFEERDEINSTVVSALDEAAGAWGVKVLRYEIKDLVPPQEILRSMQAQITAERE
               |||||||||||||||||||:||||||||||||||||||||||||||||||||||||||||
m519-1         RMELDKTFEERDEINSTVVAALDEAAGAWGVKVLRYEIKDLVPPQEILRSMQAQITAERE
                     130       140       150       160       170       180

                     190       200       210       220       230       240
a519-1.pep     KRARIAESEGRKIEQINLASGQREAEIQQSEGEAQAAVNASNAEKIARINRAKGEAESLR
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m519-1         KRARIAESEGRKIEQINLASGQREAEIQQSEGEAQAAVNASNAEKIARINRAKGEAESLR
                     190       200       210       220       230       240

                     250       260       270       280       290       300
a519-1.pep     LVAEANAEAIRQIAAALQTQGGADAVNLKIAEQYVAAFNNLAKESNTLIMPANVADIGSL
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m519-1         LVAEANAEAIRQIAAALQTQGGADAVNLKIAEQYVAAFNNLAKESNTLIMPANVADIGSL
                     250       260       270       280       290       300

                     310
a519-1.pep     ISAGMKIIDSSKTAKX
               ||||||||||||||||
m519-1         ISAGMKIIDSSKTAKX
                     310
```

576 and 576-1 gnm22.seq

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 20>:

```
m576.seq.. (partial)
      1  ..ATGCAGCAGG CAAGCTATGC GATGGGCGTG GACATCGGAC GCTCCCTGAA
     51    GCAAATGAAG GAACAGGGCG CGGAAATCGA TTTGAAAGTC TTTACCGAAG
    101    CCATGCAGGC AGTGTATGAC GGCAAAGAAA TCAAAATGAC CGAAGAGCAG
    151    GCTCAGGAAG TCATGATGAA ATTCCTTCAG GAACAACAGG CTAAAGCCGT
    201    AGAAAAACAC AAGGCGGACG CGAAGGCCAA TAAAGAAAAA GGCGAAGCCT
```

```
251     TTCTGAAAGA AAATGCCGCC AAAGACGGCG TGAAGACCAC TGCTTCCGGC
301     CTGCAATACA AAATCACCAA ACAGGGCGAA GGCAAACAGC CGACCAAAGA
351     CGACATCGTT ACCGTGGAAT ACGAAGGCCG CCTGATTGAC GGTACGGTAT
401     TCGACAGCAG CAAAGCCAAC GGCGGCCCGG TCACCTTCCC TTTGAGCCAA
451     GTGATTCCGG GTTGGACCGA AGgCGTACAG CTTCTGAAAG AAGGCGGCGA
501     AGCCACGTTC TACATCCCGT CCAACCTTGC CTACCGCGAA CAGGGTGCGG
551     GCGACAAAAT CGGTCCGAAC GCCACTTTGG TATTTGATGT GAAACTGGTC
601     AAAATCGGCG CACCCGAAAA CGCGCCCGCC AAGCAGCCGG CTCAAGTCGA
651     CATCAAAAAA GTAAATTAA
```

This corresponds to the amino acid sequence <SEQ ID 21; ORF 576>:

```
m576.pep.. (partial)
  1   ..MQQASYAMGV DIGRSLKQMK EQGAEIDLKV FTEAMQAVYD GKEIKMTEEQ
 51     AQEVMMKFLQ EQQAKAVEKH KADAKANKEK GEAFLKENAA KDGVKTTASG
101     LQYKITKQGE GKQPTKDDIV TVEYEGRLID GTVFDSSKAN GGPVTFPLSQ
151     VIPGWTEGVQ LLKEGGEATF YIPSNLAYRE QGAGDKIGPN ATLVFDVKLV
201     KIGAPENAPA KQPAQVDIKK VN*
```

The following partial DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 22>:

```
g576.seq.. (partial)
  1   ..atgggcgtgg acatcggacg ctccctgaaa caaatgaagg aacagggcgc
 51     ggaaatcgat ttgaaagtct ttaccgatgc catgcaggca gtgtatgacg
101     gcaaagaaat caaaatgacc gaagagcagg cccaggaagt gatgatgaaa
151     ttcctgcagg agcagcaggc taaagccgta gaaaaacaca aggcggatgc
201     gaaggccaac aaagaaaaag gcgaagcctt cctgaaggaa aatgccgccg
251     aagacggcgt gaagaccact gcttccggtc tgcagtacaa aatcaccaaa
301     cagggtgaag gcaaacagcc gacaaaagac gacatcgtta ccgtggaata
351     cgaaggccgc ctgattgacg gtaccgtatt cgacagcagc aaagccaacg
401     gcggcccggc caccttccct ttgagccaag tgattccggg ttggaccgaa
451     ggcgtacggc ttctgaaaga aggcggcgaa gccacgttct acatcccgtc
501     caaccttgcc taccgcgaac agggtgcggg cgaaaaaatc ggtccgaacg
551     ccactttggt atttgacgtg aaactggtca aaatcggcgc acccgaaaac
601     gcgcccgcca agcagccgga tcaagtcgac atcaaaaaag taaattaa
```

This corresponds to the amino acid sequence <SEQ ID 23; ORF 576.ng>:

```
g576.pep.. (partial)
  1   ..MGVDIGRSLK QMKEQGAEID LKVFTDAMQA VYDGKEIKMT EEQAQEVMMK
 51     FLQEQQAKAV EKHKADAKAN KEKGEAFLKE NAAEDGVKTT ASGLQYKITK
101     QGEGKQPTKD DIVTVEYEGR LIDGTVFDSS KANGGPATFP LSQVIPGWTE
151     GVRLLKEGGE ATFYIPSNLA YREQGAGEKI GPNATLVFDV KLVKIGAPEN
201     APAKQPDQVD IKKVN*
```

Computer analysis of this amino acid sequence gave the following results:

<u>Homology with a predicted ORF from *N. gonorrhoeae*</u>

```
m576/g576  97.2% identity in 215 aa overlap

                    10        20        30        40        50        60
m576.pep    MQQASYAMGVDIGRSLKQMKEQGAEIDLKVFTEAMQAVYDGKEIKMTEEQAQEVMMKFLQ
                    ||||||||||||||||||||||||:|||||||||||||||||||||||||||
g576                MGVDIGRSLKQMKEQGAEIDLKVFTDAMQAVYDGKEIKMTEEQAQEVMMKFLQ
                            10        20        30        40        50

                    70        80        90       100       110       120
m576.pep    EQQAKAVEKHKADAKANKEKGEAFLKENAAKDGVKTTASGLQYKITKQGEGKQPTKDDIV
            ||||||||||||||||||||||||||||||:|||||||||||||||||||||||||||||
g576        EQQAKAVEKHKADAKANKEKGEAFLKENAAEDGVKTTASGLQYKITKQGEGKQPTKDDIV
                  60        70        80        90       100       110
```

```
                     130       140       150       160       170       180
m576.pep      TVEYEGRLIDGTVFDSSKANGGPVTFPLSQVIPGWTEGVQLLKEGGEATFYIPSNLAYRE
              |||||||||||||||||||||||:||||||||||||||||:||||||||||||||||||||
g576          TVEYEGRLIDGTVFDSSKANGGPATFPLSQVIPGWTEGVRLLKEGGEATFYIPSNLAYRE
                     120       130       140       150       160       170

                     190       200       210       220
m576.pep      QGAGDKIGPNATLVFDVKLVKIGAPENAPAKQPAQVDIKKVNX
              ||||:|||||||||||||||||||||||||||| |||||||||
g576          QGAGEKIGPNATLVFDVKLVKIGAPENAPAKQPDQVDIKKVNX
                     180       190       200       210
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 24>:

```
a576.seq
      1  ATGAACACCA TTTTCAAAAT CAGCGCACTG ACCCTTTCCG CCGCTTTGGC
     51  ACTTTCCGCC TGCGGCAAAA AACAAGCCGC CCCCGCATCT GCATCCGAAC
    101  CTGCCGCCGC TTCTTCCGCG CAGGGCGACA CCTCTTCGAT CGGCAGCACG
    151  ATGCAGCAGG CAAGCTATGC GATGGGCGTG GACATCGGAC GCTCCCTGAA
    201  GCAAATGAAG GAACAGGGCG CGGAAATCGA TTTGAAAGTC TTTACCGAAG
    251  CCATGCAGGC AGTGTATGAC GGCAAAGAAA TCAAAATGAC CGAAGAGCAG
    301  GCTCAGGAAG TCATGATGAA ATTCCTTCAG GAACAACAGG CTAAAGCCGT
    351  AGAAAAACAC AAGGCGGACG CGAAGGCCAA TAAAGAAAAA GGCGAAGCCT
    401  TTCTGAAAGA AAATGCCGCC AAAGACGGCG TGAAGACCAC TGCTTCCGGC
    451  CTGCAATACA AAATCACCAA ACAGGGCGAA GGCAAACAGC CGACCAAAGA
    501  CGACATCGTT ACCGTGGAAT ACGAAGGCCG CCTGATTGAC GGTACGGTAT
    551  TCGACAGCAG CAAAGCCAAC GGCGGCCCGG TCACCTTCCC TTTGAGCCAA
    601  GTGATTCTGG GTTGGACCGA AGGCGTACAG CTTCTGAAAG AAGGCGGCGA
    651  AGCCACGTTC TACATCCCGT CCAACCTTGC CTACCGCGAA CAGGGTGCGG
    701  GCGACAAAAT CGGCCCGAAC GCCACTTTGG TATTTGATGT GAAACTGGTC
    751  AAAATCGGCG CACCCGAAAA CGCGCCCGCC AAGCAGCCGG CTCAAGTCGA
    801  CATCAAAAAA GTAAATTAA
```

This corresponds to the amino acid sequence <SEQ ID 25; ORF 576.a>:

```
a576.pep
      1  MNTIFKISAL TLSAALALSA CGKKEAAPAS ASEPAAASSA QGDTSSIGST
     51  MQQASYAMGV DIGRSLKQMK EQGAEIDLKV FTEAMQAVYD GKEIKMTEEQ
    101  AQEVMMKFLQ EQQAKAVEKH KADAKANKEK GEAFLKENAA KDGVKTTASG
    151  LQYKITKQGE GKQPTKDDIV TVEYEGRLID GTVFDSSKAN GGPVTFPLSQ
    201  VILGWTEGVQ LLKEGGEATF YIPSNLAYRE QGAGDKIGPN ATLVFDVKLV
    251  KIGAPENAPA KQPAQVDIKK VN*
```

```
m576/a576     ORFs 576 and 576.a showed a 99.5% identity in 222 aa overlap

                                                      10        20        30
m576.pep                                    MQQASYAMGVDIGRSLKQMKEQGAEIDLKV
                                            ||||||||||||||||||||||||||||||
a576          CGKKEAAPASASEPAAASSAQGDTSSIGSTMQQASYAMGVDIGRSLKQMKEQGAEIDLKV
                      30        40        50        60        70        80

                      40        50        60        70        80        90
m576.pep      FTEAMQAVYDGKEIKMTEEQAQEVMMKFLQEQQAKAVEKHKADAKANKEKGEAFLKENAA
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a576          FTEAMQAVYDGKEIKMTEEQAQEVMMKFLQEQQAKAVEKHKADAKANKEKGEAFLKENAA
                      90       100       110       120       130       140

                     100       110       120       130       140       150
m576.pep      KDGVKTTASGLQYKITKQGEGKQPTKDDIVTVEYEGRLIDGTVFDSSKANGGPVTFPLSQ
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a576          KDGVKTTASGLQYKITKQGEGKQPTKDDIVTVEYEGRLIDGTVFDSSKANGGPVTFPLSQ
                     150       160       170       180       190       200
```

```
                 160       170       180       190       200       210
m576.pep     VIPGWTEGVQLLKEGGEATFYIPSNLAYREQGAGDKIGPNATLVFDVKLVKIGAPENAPA
             || |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a576         VILGWTEGVQLLKEGGEATFYIPSNLAYREQGAGDKIGPNATLVFDVKLVKIGAPENAPA
                 210       220       230       240       250       260

                 220
m576.pep     KQPAQVDIKKVNX
             |||||||||||||
a576         KQPAQVDIKKVNX
                 270
```

Further work revealed the following DNA sequence identified in *N. meningitidis* <SEQ ID 26>:

```
m576-1.seq
      1  ATGAACACCA TTTTCAAAAT CAGCGCACTG ACCCTTTCCG CCGCTTTGGC
     51  ACTTTCCGCC TGCGGCAAAA AAGAAGCCGC CCCCGCATCT GCATCCGAAC
    101  CTGCCGCCGC TTCTTCCGCG CAGGGCGACA CCTCTTCGAT CGGCAGCACG
    151  ATGCAGCAGG CAAGCTATGC GATGGGCGTG GACATCGGAC GCTCCCTGAA
    201  GCAAATGAAG GAACAGGGCG CGGAAATCGA TTTGAAAGTC TTTACCGAAG
    251  CCATGCAGGC AGTGTATGAC GGCAAAGAAA TCAAAATGAC CGAAGAGCAG
    301  GCTCAGGAAG TCATGATGAA ATTCCTTCAG GAACAACAGG CTAAAGCCGT
    351  AGAAAAACAC AAGGCGGACG CGAAGGCCAA TAAAGAAAAA GGCGAAGCCT
    401  TTCTGAAAGA AAATGCCGCC AAAGACGGCG TGAAGACCAC TGCTTCCGGC
    451  CTGCAATACA AAATCACCAA ACAGGGCGAA GGCAAACAGC CGACCAAAGA
    501  CGACATCGTT ACCGTGGAAT ACGAAGGCCG CCTGATTGAC GGTACGGTAT
    551  TCGACAGCAG CAAAGCCAAC GGCGGCCCGG TCACCTTCCC TTTGAGCCAA
    601  CTGATTCCGG GTTGGACCGA AGGCGTACAG CTTCTGAAAG AAGGCGGCGA
    651  AGCCACGTTC TACATCCCGT CCAACCTTGC CTACCGCGAA CAGGGTGCGG
    701  CCCACAAAAT CGGTCCGAAC GCCACTTTGG TATTTGATGT GAAACTGCTC
    751  AAAATCGGCG CACCCGAAAA CGCGCCCGCC AAGCAGCCGG CTCAAGTCGA
    801  CATCAAAAAA GTAAATTAA
```

This corresponds to the amino acid sequence <SEQ ID 27; ORF 576-1>:

```
m576-1.pep
      1  MNTIFKISAL TLSAALALSA CCKKEAAPAS ASEPAAASSA QGDTSSIGST
     51  MQQASYAMGV DIGRSLKQMK EQGAEIDLKV FTEAMQAVYD GKEIKMTEEQ
    101  AQEVMMKFLQ EQQAKAVEKH KADAKANKEK GEAFLKENAA KDGVKTTASG
    151  LQYKITKQGE GKQPTKDDIV TVEYEGRLID GTVFDSSKAN GGPVTFPLSQ
    201  VIPGWTEGVQ LLKEGGEATF YIPSNLAYRE QGAGDKIGPN ATLVFDVKLV
    251  KIGAPENAPA KQPAQVDIKK VN*
```

The following DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 28>:

```
g576-1.seq
      1  ATGAACACCA TTTTCAAAAT CAGCGCACTG ACCCTTTCCG CCGCTTTGGC
     51  ACTTTCCGCC TGCGGCAAAA AAGAAGCCGC CCCCGCATCT GCATCCGAAC
    101  CTGCCGCCGC TTCTGCCGCG CAGGGCGACA CCTCTTCAAT CGGCAGCACG
    151  ATGCAGCAGG CAACCTATGC AATGGGCGTG GACATCGGAC GCTCCCTCAA
    201  ACAAATGAAG GAACAGGGCG CGGAAATCGA TTTGAAAGTC TTTACCGATG
    251  CCATGCAGGC AGTGTATGAC GGCAAAGAAA TCAAAATGAC CGAAGAGCAG
    301  GCCCAGGAAG TGATGATGAA ATTCCTGCAG GAGCAGCAGG CTAAAGCCGT
    351  AGAAAAACAC AAGGCGGATG CGAAGGCCAA CAAAGAAAAA GGCGAAGCCT
    401  TCCTGAAGGA AAATGCCGCC AAAGACGGCG TGAAGACCAC TGCTTCCGGT
    451  CTGCAGTACA AAATCACCAA ACAGGGTGAA GGCAAACACC CCACAAAAGA
    501  CGACATCGTT ACCGTGGAAT ACGAAGGCCG CCTGATTGAC GGTACCGTAT
    551  TCGACAGCAG CAAAGCCAAC GGCGGCCCGG CCACCTTCCC TTTGAGCCAA
    601  GTGATTCCGG GTTGGACCGA AGGCGTACGG CTTCTGAAAG AAGGCGGCGA
    651  ACCCACGTTC TACATCCCGT CCAACCTTGC CTACCGCGAA CACGGTGCGG
    701  CCCAAAAAAT CGGTCCGAAC GCCACTTTGG TATTTGACGT GAAACTGGTC
    751  AAAATCGGCG CACCCGAAAA CGCGCCCGCC AAGCAGCCGG ATCAAGTCGA
```

```
801  CATCAAAAAA GTAAATTAA
```

This corresponds to the amino acid sequence <SEQ ID 29; ORF 576-1.ng>:

```
g576-1.pep
  1  MNTIFKISAL TLSAALALSA CGKKEAAPAS ASEPAAASAA QGDTSSIGST
 51  MQQASYAMGV DIGRSLKQMK EQGAEIDLKV FTDAMQAVYD GKEIKMTEEQ
101  AQEVMMKFLQ EQQAKAVEKH KADAKANKEK GEAFLKENAA KDGVKTTASG
151  LQYKITKQGE GKQPTKDDIV TVEYEGRLID GTVFDSSKAN GGPATFPLSQ
201  VIPGWTEGVR LLKEGGEATF YIPSNLAYRE QGAGEKIGPN ATLVFDVKLV
251  KIGAPENAPA KQPDQVDIKK VN*
```

g576-1/m576-1 ORFs 576-1 and 576-1.ng showed a 97.8% identity in 272 aa overlap

```
                    10        20        30        40        50        60
g576-1.pep  MNTIFKISALTLSAALALSACGKKEAAPASASEPAAASAAQGDTSSIGSTMQQASYAMGV
            ||||||||||||||||||||||||||||||||||||||:|||||||||||||||||||||
m576-1      MNTIFKISALTLSAALALSACGKKEAAPASASEPAAASSAQGDTSSIGSTMQQASYAMGV
                    10        20        30        40        50        60

                    70        80        90       100       110       120
g576-1.pep  DIGRSLKQMKEQGAEIDLKVFTDAMQAVYDGKEIKMTEEQAQEVMMKFLQEQQAKAVEKH
            ||||||||||||||||||||||:|||||||||||||||||||||||||||||||||||||
m576-1      DIGRSLKQMKEQGAEIDLKVFTEAMQAVYDGKEIKMTEEQAQEVMMKFLQEQQAKAVEKH
                    70        80        90       100       110       120

                   130       140       150       160       170       180
g576-1.pep  KADAKANKEKGEAFLKENAAKDGVKTTASGLQYKITKQGEGKQPTKDDIVTVEYEGRLID
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m576-1      KADAKANKEKGEAFLKENAAKDGVKTTASGLQYKITKQGEGKQPTKDDIVTVEYEGRLID
                   130       140       150       160       170       180

                   190       200       210       220       230       240
g576-1.pep  GTVFDSSKANGGPATFPLSQVIPGWTEGVRLLKEGGEATFYIPSNLAYREQGAGEKIGPN
            |||||||||||||:|||||||||||||||:||||||||||||||||||||||||:|||||
m576-1      GTVFDSSKANGGPVTFPLSQVIPGWTEGVQLLKEGGEATFYIPSNLAYREQGAGDKIGPN
                   190       200       210       220       230       240

                   250       260       270
g576-1.pep  ATLVFDVKLVKIGAPENAPAKQPDQVDIKKVNX
            ||||||||||||||||||||||| |||||||||
m576-1      ATLVFDVKLVKIGAPENAPAKQPAQVDIKKVNX
                   250       260       270
```

The following DNA sequence was identified in *N. meningitidis* <SEQ ID 30>:

```
a576-1.seq
  1  ATGAACACCA TTTTCAAAAT CAGCGCACTG ACCCTTTCCG CCGCTTTGGC
 51  ACTTTCCGCC TGCGGCAAAA AAGAAGCCGC CCCCGCATCT GCATCCGAAC
101  CTGCCGCCGC TTCTTCCGCG CAGGGCGACA CCTCTTCGAT CGGCAGCACG
151  ATGCAGCAGG CAAGCTATGC GATGGGCGTG GACATCGGAC GCTCCCTGAA
201  GCAAATGAAG GAACAGGGCG CGGAAATCGA TTTGAAAGTC TTTACCGAAG
251  CCATGCAGGC AGTGTATGAC GGCAAAGAAA TCAAAATGAC CGAAGAGCAG
301  GCTCAGGAAG TCATGATGAA ATTCCTTCAG GAACAACAGG CTAAAGCCGT
351  AGAAAAACAC AAGGCGGACG CGAAGGCCAA TAAAGAAAAA GGCGAAGCCT
401  TTCTGAAAGA AAATGCCGCC AAAGACGGCG TGAAGACCAC TGCTTCCGGC
451  CTGCAATACA AAATCACCAA ACAGGGCGAA GGCAAACAGC CGACCAAAGA
501  CGACATCGTT ACCGTGGAAT ACGAAGGCCG CCTGATTGAC GGTACGGTAT
551  TCGACAGCAG CAAAGCCAAC GGCGGCCCGG TCACCTTCCC TTTGAGCCAA
601  GTGATTCTGG GTTGGACCGA AGGCGTACAG CTTCTGAAAG AAGGCGGCGA
651  AGCCACGTTC TACATCCCGT CCAACCTTGC CTACCGCGAA CAGGGTGCGG
701  GCGACAAAAT CGGCCCCGAAC GCCACTTTGG TATTTGATGT GAAACTGGTC
```

```
751  AAAATCGGCG CACCCGAAAA CGCGCCCGCC AAGCAGCCGG CTCAAGTCGA
801  CATCAAAAAA GTAAATTAA
```

This corresponds to the amino acid sequence <SEQ ID 31; ORF 576-1.a>:

```
a576-1.pep
  1  MNTIFKISAL TLSAALALSA CGKKEAAPAS ASEPAAASSA QGDTSSIGST
 51  MQQASYAMGV DIGRSLKQMK EQGAEIDLKV FTEAMQAVYD GKEIKMTEEQ
101  AQEVMMKFLQ EQQAKAVEKH KADAKANKEK GEAFLKENAA KDGVKTTASG
151  LQYKITKQGE GKQPTKDDIV TVEYEGRLID GTVFDSSKAN GGPVTFPLSQ
201  VILGWTEGVQ LLKEGGEATF YIPSNLAYRE QGAGDKIGPN ATLVFDVKLV
251  KIGAPENAPA KQPAQVDIKK VN*
```

a576-1/m576-1 ORFs 576-1 and 576-1.a 99.6% identity in 272 aa overlap

```
                   10        20        30        40        50        60
a576-1.pep  MNTIFKISALTLSAALALSACGKKEAAPASASEPAAASSAQGDTSSIGSTMQQASYAMGV
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m576-1      MNTIFKISALTLSAALALSACGKKEAAPASASEPAAASSAQGDTSSIGSTMQQASYAMGV
                   10        20        30        40        50        60

                   70        80        90       100       110       120
a576-1.pep  DIGRSLKQMKEQGAEIDLKVFTEAMQAVYDGKEIKMTEEQAQEVMMKFLQEQQAKAVEKH
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m576-1      DIGRSLKQMKEQGAEIDLKVFTEAMQAVYDGKEIKMTEEQAQEVMMKFLQEQQAKAVEKH
                   70        80        90       100       110       120

                  130       140       150       160       170       180
a576-1.pep  KADAKANKEKGEAFLKENAAKDGVKTTASGLQYKITKQGEGKQPTKDDIVTVEYEGRLID
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m576-1      KADAKANKEKGEAFLKENAAKDGVKTTASGLQYKITKQGEGKQPTKDDIVTVEYEGRLID
                  130       140       150       160       170       180

                  190       200       210       220       230       240
a576-1.pep  GTVFDSSKANGGPVTFPLSQVILGWTEGVQLLKEGGEATFYIPSNLAYREQGAGDKIGPN
            |||||||||||||||||||||| |||||||||||||||||||||||||||||||||||||
m576-1      GTVFDSSKANGGPVTFPLSQVIPGWTEGVQLLKEGGEATFYIPSNLAYREQGAGDKIGPN
                  190       200       210       220       230       240

                  250       260       270
a576-1.pep  ATLVFDVKLVKIGAPENAPAKQPAQVDIKKVNX
            |||||||||||||||||||||||||||||||||
m576-1      ATLVFDVKLVKIGAPENAPAKQPAQVDIKKVNX
                  250       260       270
```

919 and 919-2 gnm43.seq

The following partial DNA sequence was identified in *N.meningitidis* <SEQ ID 32>:

```
m919.seq
  1  ATGAAAAAAT ACCTATTCCG CGCCGCCCTG TACGGCATCG CCGCCGCCAT
 51  CCTCGCCGCC TGCCAAAGCA AGAGCATCCA AACCTTTCCG CAACCCGACA
101  CATCCGTCAT CAACGGCCCG GACCGGCCGG TCGGCATCCC CGACCCCGCC
151  GGAACGACGG TCGGCGGCGG CGGGGCCGTC TATACCGTTG TACCGCACCT
201  GTCCCTGCCC CACTGGGCGG CGCAGGATTT CGCCAAAAGC CTGCAATCCT
251  TCCGCCTCGG CTGCGCCAAT TTGAAAAACC GCCAAGGCTG GCAGGATGTG
301  TGCGCCCAAG CCTTTCAAAC CCCCGTCCAT TCCTTTCAGG CAAAACAGTT
351  TTTTGAACGC TATTTCACGC CGTGGCAGGT TGCAGGCAAC GGAAGCCTTG
```

```
 401  CCGGTACGGT TACCGGCTAT TACGAACCGG TGCTGAAGGG CGACGACAGG
 451  CGGACGGCAC AAGCCCGCTT CCCGATTTAC GGTATTCCCG ACGATTTTAT
 501  CTCCGTCCCC CTGCCTGCCG GTTTGCGGAG CGGAAAAGCC CTTGTCCGCA
 551  TCAGGCAGAC GGGAAAAAAC AGCGGCACAA TCGACAATAC CGGCGGCACA
 601  CATACCGCCG ACCTCTCCcG ATTCCCCATC ACCGCGCGCA CAACAGCAAT
 651  CAAAGGCAGG TTTGAAGGAA GCCGCTTCCT CCCCTACCAC ACGCGCAACC
 701  AAATCAACGG CGGCGCGCTT GACGGCAAAG CCCCGATACT CGGTTACGCC
 751  GAAGACCCTG TCGAACTTTT TTTATGCAC ATCCAAGGCT CGGGCCGTCT
 801  GAAAACCCCG TCCGGCAAAT ACATCCGCAT CGGCTATGCC GACAAAAACG
 851  AACATCCyTA CGTTTCCATC GGACGCTATA TGGCGGATAA GGGCTACCTC
 901  AAACTCGGAC AAACCTCCAT GCAGGGCATT AAGTCTTATA TGCGGCAAAA
 951  TCCGCAACGC CTCGCCGAAG TTTTGGGTCA AAACCCCAGC TATATCTTTT
1001  TCCGCGAGCT TGCCGGAAGC AGCAATGACG GCCCTGTCGG CGCACTGGGC
1051  ACGCCGCTGA TGGGGGAATA TGCCGGCGCA GTCGACCGGC ACTACATTAC
1101  CTTGGGTGCG CCCTTATTTG TCGCCACCGC CCATCCGGTT ACCCGCAAAG
1151  CCCTCAACCG CCTGATTATG GCGCAGGATA CCGGCAGCGC GATTAAAGGC
1201  GCGGTGCGCG TGGATTATTT TTGGGGATAC GGCGACGAAG CCGGCGAACT
1251  TGCCGGCAAA CAGAAAACCA CGGGATATGT CTGGCAGCTC CTACCCAACG
1301  GTATGAAGCC CGAATACCGc CCGTAA
```

This corresponds to the amino acid sequence <SEQ ID 33; ORF 919>:

m919.pep

```
   1  MKKYLFRAAL YGIAAAILAA CQSKSIQTFP QPDTSVINGP DRPVGIPDPA
  51  GTTVGGGGAV YTVVPHLSLP HWAAQDFAKS LQSFRLGCAN LKNRQGWQDV
 101  CAQAFQTPVH SFQAKQFFER YFTPWQVAGN GSLAGTVTGY YEPVLKGDDR
 151  RTAQARFPIY GIPDDFISVP LPAGLRSGKA LVRIRQTGKN SGTIDNTGGT
 201  HTADLSRFPI TARTTAIKGR FEGSRFLPYH TRNQINGGAL DGKAPILGYA
 251  EDPVELFFMH IQGSGRLKTP SGKYIRIGYA DKNEHPYVSI GRYMADKGYL
 301  KLGQTSMQGI KSYMRQNPQR LAEVLGQNPS YIFFRELAGS SNDGPVGALG
 351  TPLMGEYAGA VDRHYITLGA PLFVATAHPV TRKALNRLIM AQDTGSAIKG
 401  AVRVDYFWGY GDEAGELAGK QKTTGYVWQL LPNGMKPEYR P*
```

The following partial DNA sequence was identified in *N.meningitidis* <SEQ ID 34>:

m919-2.seq

```
   1  ATGAAAAAAT ACCTATTCCG CGCCGCCCTG TACGGCATCG CCGCCGCCAT
  51  CCTCGCCGCC TGCCAAAGCA AGAGCATCCA AACCTTTCCG CAACCCGACA
 101  CATCCGTCAT CAACGGCCCG GACCGGCCGG TCGGCATCCC CGACCCCGCC
 151  GGAACGACGG TCGGCGGCGG CGGGGCCGTC TATACCGTTG TACCGCACCT
 201  GTCCCTGCCC CACTGGGCGG CGCAGGATTT CGCCAAAAGC CTGCAATCCT
 251  TCCGCCTCGG CTGCGCCAAT TTGAAAAACC GCCAAGGCTG GCAGGATGTG
 301  TGCGCCCAAG CCTTTCAAAC CCCCGTCCAT TCCTTTCAGG CAAAACAGTT
 351  TTTTGAACGC TATTTCACGC CGTGGCAGGT TGCAGGCAAC GGAAGCCTTG
 401  CCGGTACGGT TACCGGCTAT TACGAACCGG TGCTGAAGGG CGACGACAGG
 451  CGGACGGCAC AAGCCCGCTT CCCGATTTAC GGTATTCCCG ACGATTTTAT
 501  CTCCGTCCCC CTGCCTGCCG GTTTGCGGAG CGGAAAAGCC CTTGTCCGCA
 551  TCAGGCAGAC GGGAAAAAAC AGCGGCACAA TCGACAATAC CGGCGGCACA
 601  CATACCGCCG ACCTCTCCCG ATTCCCCATC ACCGCGCGCA CAACAGCAAT
 651  CAAAGGCAGG TTTGAAGGAA GCCGCTTCCT CCCCTACCAC ACGCGCAACC
 701  AAATCAACGG CGGCGCGCTT GACGGCAAAG CCCCGATACT CGGTTACGCC
 751  GAAGACCCTG TCGAACTTTT TTTATGCAC ATCCAAGGCT CGGGCCGTCT
 801  GAAAACCCCG TCCGGCAAAT ACATCCGCAT CGGCTATGCC GACAAAAACG
 851  AACATCCCTA CGTTTCCATC GGACGCTATA TGGCGGATAA GGGCTACCTC
 901  AAACTCGGAC AAACCTCCAT GCAGGGCATT AAGTCTTATA TGCGGCAAAA
 951  TCCGCAACGC CTCGCCGAAG TTTTGGGTCA AAACCCCAGC TATATCTTTT
1001  TCCGCGAGCT TGCCGGAAGC AGCAATGACG GCCCTGTCGG CGCACTGGGC
1051  ACGCCGCTGA TGGGGGAATA TGCCGGCGCA GTCGACCGGC ACTACATTAC
1101  CTTGGGTGCG CCCTTATTTG TCGCCACCGC CCATCCGGTT ACCCGCAAAG
1151  CCCTCAACCG CCTGATTATG GCGCAGGATA CCGGCAGCGC GATTAAAGGC
```

1201 GCGGTGCGCG TGGATTATTT TTGGGGATAC GGCGACGAAG CCGGCGAACT
1251 TGCCGGCAAA CAGAAAACCA CGGGATATGT CTGGCAGCTC CTACCCAACG
1301 GTATGAAGCC CGAATACCGC CCGTAA

This corresponds to the amino acid sequence <SEQ ID 35; ORF 919-2>:

m919-2.pep

1 MKKYLFRAAL YGIAAAILAA CQSKSIQTFP QPDTSVINGP DRPVGIPDPA
51 GTTVGGGGAV YTVVPHLSLP HWAAQDFAKS LQSFRLGCAN LKNRQGWQDV
101 CAQAFQTPVH SFQAKQFFER YFTPWQVAGN GSLAGTVTGY YEPVLKGDDR
151 RTAQARFPIY GIPDDFISVP LPAGLRSGKA LVRIRQTGKN SGTIDNTGGT
201 HTADLSRFPI TARTTAIKGR FEGSRFLPYH TRNQINGGAL DGKAPILGYA
251 EDPVELFFMH IQGSGRLKTP SGKYIRIGYA DKNEHPYVSI GRYMADKGYL
301 KLGQTSMQGI KSYMRQNPQR LAEVLGQNPS YIFFRELAGS SNDGPVGALG
351 TPLMGEYAGA VDRHYITLGA PLFVATAHPV TRKALNRLIM AQDTGSAIKG
401 AVRVDYFWGY GDEAGELAGK QKTTGYVWQL LPNGMKPEYR P*

The following partial DNA sequence was identified in *N.gonorrhoeae* <SEQ ID 36>:

g919.seq

1 ATGAAAAAAC ACCTGCTCCG CTCCGCCCTG TACGGcatCG CCGCCgccAT
51 CctcgCCGCC TGCCAAAgca gGAGCATCCA AACCTTTCCG CAACCCGACA
101 CATCCGTCAT CAACGGCCCG GACCGGCCGG CCGGCATCCC CGACCCCGCC
151 GGAACGACGG TTGCCGGCGG CGGGGCCGTC TATACCGTTG TGCCGCACCT
201 GTCCATGCCC CACTGGGCGG CGCaggATTT TGCCAAAAGC CTGCAATCCT
251 TCCGCCTCGG CTGCGCCAAT TTGAAAAACC GCCAAGGCTG GCAGGATGTG
301 TGCGCCCAAG CCTTTCAAAC CCCCGTGCAT TCCTTTCAGG CAAAGcGgTT
351 TTTTGAACGC TATTTCACGC cgtGGCaggt tgcaggcaAC GGAAGcCTTG
401 Caggtacggt TACCGGCTAT TACGAACCGG TGCTGAAGGG CGACGGCAGG
451 CGGACGGAAC GGGCCCGCTT CCCGATTTAC GGTATTCCCG ACGATTTTAT
501 CTCCGTCCCG CTGCCTGCCG GTTTGCGGGG CGGAAAAAAC CTTGTCCGCA
551 TCAGGCAGac ggGGAAAAAC AGCGGCACGA TCGACAATGC CGGCGGCACG
601 CATACCGCCG ACCTCTCCCG ATTCCCCATC ACCGCGCGCA CAACGGcaat
651 caaaGGCAGG TTTGAaggAA GCCGCTTCCT CCCTTACCAC ACGCGCAACC
701 AAAtcaacGG CGGCgcgcTT GACGGCAAag cccCCATCCT CggttacgcC
751 GAagaccCcG tcgaactttTT TTTCATGCAC AtccaaggCT CGGGCCGCCT
801 GAAAACCCcg tccggcaaat acatCCGCAt cggaTacgcc gacAAAAACG
851 AACAtccgTa tgtttccatc ggACGctaTA TGGCGGACAA AGGCTACCTC
901 AAGctcgggc agACCTCGAT GCAGGgcatc aaagcCTATA TGCGGCAAAA
951 TCCGCAACGC CTCGCCGAAG TTTTGGGTCA AAACCCCAGC TATATCTTTT
1001 TCCGCGAGCT TGCCGGAAGC GGCAATGAGG GCCCCGTCGG CGCACTGGGC
1051 ACGCCACTGA TGGGGGAATA CGCCGGCGCA ATCGACCGGC ACTACATTAC
1101 CTTGGGCGCG CCCTTATTTG TCGCCACCGC CCATCCGGTT ACCCGCAAAG
1151 CCCTCAACCG CCTGATTATG GCGCAGGATA CAGGCAGCGC GATCAAAGGC
1201 GCGGTGCGCG TGGATTATTT TTGGGGTTAC GGCGACGAAG CCGGCGAACT
1251 TGCCGGCAAA CAGAAAACCA CGGGATACGT CTGGCAGCTC CTGCCCAACG
1301 GCATGAAGCC CGAATACCGC CCGTGA

This corresponds to the amino acid sequence <SEQ ID 37; ORF 919.ng>:

g919.pep

1 MKKHLLRSAL YGIAAAILAA CQSRSIQTFP QPDTSVINGP DRPAGIPDPA
51 GTTVAGGGAV YTVVPHLSMP HWAAQDFAKS LQSFRLGCAN LKNRQGWQDV
101 CAQAFQTPVH SFQAKRFFER YFTPWQVAGN GSLAGTVTGY YEPVLKGDGR
151 RTERARFPIY GIPDDFISVP LPAGLRGGKN LVRIRQTGKN SGTIDNAGGT
201 HTADLSRFPI TARTTAIKGR FEGSRFLPYH TRNQINGGAL DGKAPILGYA
251 EDPVELFFMH IQGSGRLKTP SGKYIRIGYA DKNEHPYVSI GRYMADKGYL
301 KLGQTSMQGI KAYMRQNPQR LAEVLGQNPS YIFFRELAGS GNEGPVGALG
351 TPLMGEYAGA IDRHYITLGA PLFVATAHPV TRKALNRLIM AQDTGSAIKG
401 AVRVDYFWGY GDEAGELAGK QKTTGYVWQL LPNGMKPEYR P*

ORF 919 shows 95.9 % identity over a 441 aa overlap with a predicted ORF (ORF 919.ng) from *N. gonorrhoeae:*

m919/g919

```
                          10        20        30        40        50        60
m919.pep        MKKYLFRAALYGIAAAILAACQSKSIQTFPQPDTSVINGPDRPVGIPDPAGTTVGGGGAV
                |||:|:|:|||||||||||||||:||||||||||||||||||:|||||||||||:|||||
g919            MKKHLLRSALYGIAAAILAACQSRSIQTFPQPDTSVINGPDRPAGIPDPAGTTVAGGGAV
                          10        20        30        40        50        60

                          70        80        90       100       110       120
m919.pep        YTVVPHLSLPHWAAQDFAKSLQSFRLGCANLKNRQGWQDVCAQAFQTPVHSFQAKQFFER
                ||||||||:|||||||||||||||||||||||||||||||||||||||||||||||:||||
g919            YTVVPHLSMPHWAAQDFAKSLQSFRLGCANLKNRQGWQDVCAQAFQTPVHSFQAKRFFER
                          70        80        90       100       110       120

                         130       140       150       160       170       180
m919.pep        YFTPWQVAGNGSLAGTVTGYYEPVLKGDDRRTAQARFPIYGIPDDFISVPLPAGLRSGKA
                |||||||||||||||||||||||||||| ||| :||||||||||||||||||||||:|| 
g919            YFTPWQVAGNGSLAGTVTGYYEPVLKGDGRRTERARFPIYGIPDDFISVPLPAGLRGGKN
                         130       140       150       160       170       180

                         190       200       210       220       230       240
m919.pep        LVRIRQTGKNSGTIDNTGGTHTADLSRFPITARTTAIKGRFEGSRFLPYHTRNQINGGAL
                ||||||||||||||||:|||||||||||||||||||||||||||||||||||||||||||||
g919            LVRIRQTGKNSGTIDNAGGTHTADLSRFPITARTTAIKGRFEGSRFLPYHTRNQINGGAL
                         190       200       210       220       230       240

                         250       260       270       280       290       300
m919.pep        DGKAPILGYAEDPVELFFMHIQGSGRLKTPSGKYIRIGYADKNEHPYVSIGRYMADKGYL
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
g919            DGKAPILGYAEDPVELFFMHIQGSGRLKTPSGKYIRIGYADKNEHPYVSIGRYMADKGYL
                         250       260       270       280       290       300

                         310       320       330       340       350       360
m919.pep        KLGQTSMQGIKSYMRQNPQRLAEVLGQNPSYIFFRELAGSSNDGPVGALGTPLMGEYAGA
                |||||||||||:||||||||||||||||||||||||||||:|:|||||||||||||||||
g919            KLGQTSMQGIKAYMRQNPQRLAEVLGQNPSYIFFRELAGSGNEGPVGALGTPLMGEYAGA
                         310       320       330       340       350       360

                         370       380       390       400       410       420
m919.pep        VDRHYITLGAPLFVATAHPVTRKALNRLIMAQDTGSAIKGAVRVDYFWGYGDEAGELAGK
                :|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
g919            IDRHYITLGAPLFVATAHPVTRKALNRLIMAQDTGSAIKGAVRVDYFWGYGDEAGELAGK
                         370       380       390       400       410       420

                         430       440
m919.pep        QKTTGYVWQLLPNGMKPEYRPX
                ||||||||||||||||||||||
g919            QKTTGYVWQLLPNGMKPEYRPX
                         430       440
```

The following partial DNA sequence was identified in *N.meningitidis* <SEQ ID 38>:

a919.seq

```
   1  ATGAAAAAAT ACCTATTCCG CGCCGCCCTG TGCGGCATCG CCGCCGCCAT
  51  CCTCGCCGCC TGCCAAAGCA AGAGCATCCA AACCTTTCCG CAACCCGACA
 101  CATCCGTCAT CAACGGCCCG GACCGGCCGG TCGGCATCCC CGACCCCGCC
 151  GGAACGACGG TCGGCGGCGG CGGGGCCGTT TATACCGTTG TGCCGCACCT
 201  GTCCCTGCCC CACTGGGCGG CGCAGGATTT CGCCAAAAGC CTGCAATCCT
 251  TCCGCCTCGG CTGCGCCAAT TTGAAAAACC GCCAAGGCTG GCAGGATGTG
 301  TGCGCCCAAG CCTTTCAAAC CCCCGTCCAT TCCGTTCAGG CAAAACAGTT
 351  TTTTGAACGC TATTTCACGC CGTGGCAGGT TGCAGGCAAC GGAAGCCTTG
 401  CCGGTACGGT TACCGGCTAT TACGAGCCGG TGCTGAAGGG CGACGACAGG
 451  CGGACGGCAC AAGCCCGCTT CCCGATTTAC GGTATTCCCG ACGATTTTAT
 501  CTCCGTCCCC CTGCCTGCCG GTTTGCGGAG CGGAAAAGCC CTTGTCCGCA
 551  TCAGGCAGAC GGGAAAAAAC AGCGGCACAA TCGACAATAC CGGCGGCACA
 601  CATACCGCCG ACCTCTCCCA ATTCCCCATC ACTGCGCGCA CAACGGCAAT
 651  CAAAGGCAGG TTTGAAGGAA GCCGCTTCCT CCCCTACCAC ACGCGCAACC
 701  AAATCAACGG CGGCGCGCTT GACGGCAAAG CCCCGATACT CGGTTACGCC
 751  GAAGACCCCG TCGAACTTTT TTTTATGCAC ATCCAAGGCT CGGGCCGTCT
 801  GAAAACCCCG TCCGGCAAAT ACATCCGCAT CGGCTATGCC GACAAAAACG
 851  AACATCCCTA CGTTTCCATC GGACGCTATA TGGCGGACAA AGGCTACCTC
 901  AAGCTCGGGC AGACCTCGAT GCAGGGCATC AAAGCCTATA TGCAGCAAAA
 951  CCCGCAACGC CTCGCCGAAG TTTTGGGGCA AAACCCCAGC TATATCTTTT
1001  TCCGAGAGCT TACCGGAAGC AGCAATGACG GCCCTGTCGG CGCACTGGGC
1051  ACGCCGCTGA TGGGCGAGTA CGCCGGCGCA GTCGACCGGC ACTACATTAC
1101  CTTGGGCGCG CCCTTATTTG TCGCCACCGC CCATCCGGTT ACCCGCAAAG
1151  CCCTCAACCG CCTGATTATG GCGCAGGATA CCGGCAGCGC GATTAAAGGC
1201  GCGGTGCGCG TGGATTATTT TTGGGGATAC GGCGACGAAG CCGGCGAACT
1251  TGCCGGCAAA CAGAAAACCA CGGGATATGT CTGGCAGCTT CTGCCCAACG
1301  GTATGAAGCC CGAATACCGC CCGTAA
```

This corresponds to the amino acid sequence <SEQ ID 39; ORF 919.a>:

```
a919.pep
   1  MKKYLFRAAL CGIAAAILAA CQSKSIQTFP QPDTSVINGP DRPVGIPDPA
  51  GTTVGGGGAV YTVVPHLSLP HWAAQDFAKS LQSFRLGCAN LKNRQGWQDV
 101  CAQAFQTPVH SVQAKQFFER YFTPWQVAGN GSLAGTVTGY YEPVLKGDDR
 151  RTAQARFPIY GIPDDFISVP LPAGLRSGKA LVRIRQTGKN SGTIDNTGGT
 201  HTADLSQFPI TARTTAIKGR FEGSRFLPYH TRNQINGGAL DGKAPILGYA
 251  EDPVELFFMH IQGSGRLKTP SGKYIRIGYA DKNEHPYVSI GRYMADKGYL
 301  KLGQTSMQGI KAYMQQNPQR LAEVLGQNPS YIFFRELTGS SNDGPVGALG
 351  TPLMGEYAGA VDRHYITLGA PLFVATAHPV TRKALNRLIM AQDTGSAIKG
 401  AVRVDYFWGY GDEAGELAGK QKTTGYVWQL LPNGMKPEYR P*
```

m919/a919 ORFs 919 and 919.a showed a 98.6% identity in 441 aa overlap

```
                        10        20        30        40        50        60
m919.pep    MKKYLFRAALYGIAAAILAACQSKSIQTFPQPDTSVINGPDRPVGIPDPAGTTVGGGGAV
            |||||||||| |||||||||||||||||||||||||||||||||||||||||||||||||
a919        MKKYLFRAALCGIAAAILAACQSKSIQTFPQPDTSVINGPDRPVGIPDPAGTTVGGGGAV
                    10        20        30        40        50        60

                    70        80        90       100       110       120
m919.pep    YTVVPHLSLPHWAAQDFAKSLQSFRLGCANLKNRQGWQDVCAQAFQTPVHSFQAKQFFER
            ||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
a919        YTVVPHLSLPHWAAQDFAKSLQSFRLGCANLKNRQGWQDVCAQAFQTPVHSVQAKQFFER
                    70        80        90       100       110       120

                   130       140       150       160       170       180
m919.pep    YFTPWQVAGNGSLAGTVTGYYEPVLKGDDRRTAQARFPIYGIPDDFISVPLPAGLRSGKA
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a919        YFTPWQVAGNGSLAGTVTGYYEPVLKGDDRRTAQARFPIYGIPDDFISVPLPAGLRSGKA
                   130       140       150       160       170       180

                   190       200       210       220       230       240
m919.pep    LVRIRQTGKNSGTIDNTGGTHTADLSRFPITARTTAIKGRFEGSRFLPYHTRNQINGGAL
            |||||||||||||||||||||||||||:||||||||||||||||||||||||||||||||
```

```
a919          LVRIRQTGKNSGTIDNTGGTHTADLSQFPITARTTAIKGRFEGSRFLPYHTRNQINGGAL
                      190       200       210       220       230       240

                      250       260       270       280       290       300
m919.pep      DGKAPILGYAEDPVELFFMHIQGSGRLKTPSGKYIRIGYADKNEHPYVSIGRYMADKGYL
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a919          DGKAPILGYAEDPVELFFMHIQGSGRLKTPSGKYIRIGYADKNEHPYVSIGRYMADKGYL
                      250       260       270       280       290       300

                      310       320       330       340       350       360
m919.pep      KLGQTSMQGIKSYMRQNPQRLAEVLGQNPSYIFFRELAGSSNDGPVGALGTPLMGEYAGA
              ||||||||||:||:||||||||||||||||||||||:|||||||||||||||||||||||
a919          KLGQTSMQGIKAYMQQNPQRLAEVLGQNPSYIFFRELTGSSNDGPVGALGTPLMGEYAGA
                      310       320       330       340       350       360

                      370       380       390       400       410       420
m919.pep      VDRHYITLGAPLFVATAHPVTRKALNRLIMAQDTGSAIKGAVRVDYFWGYGDEAGELAGK
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a919          VDRHYITLGAPLFVATAHPVTRKALNRLIMAQDTGSAIKGAVRVDYFWGYGDEAGELAGK
                      370       380       390       400       410       420

                      430       440
m919.pep      QKTTGYVWQLLPNGMKPEYRPX
              ||||||||||||||||||||||
a919          QKTTGYVWQLLPNGMKPEYRPX
              430       440
```

121 and 121-1

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 40>:

m121.seq

```
   1  ATGGAAACAC AGCTTTACAT CGGCATCATG TCGGGAACCA GCATGGACGG
  51  GGCGGATGCC GTACTGATAC GGATGGACGG CGGCAAATGG CTGGGCGCGG
 101  AAGGGCACGC CTTTACCCCC TACCCCGGCA GGTTACGCCG CCAATTGCTG
 151  GATTTGCAGG ACACAGGCGC AGACGAACTG CACCGCAGCA GGATTTTGTC
 201  GCAAGAACTC AGCCGCCTAT ATGCGCAAAC CGCCGCCGAA CTGCTGTGCA
 251  GTCAAAACCT CGCACCGTCC GACATTACCG CCCTCGGCTG CCACGGGCAA
 301  ACCGTCCGAC ACGCGCCGGA ACACGGTTAC AGCATACAGC TTGCCGATTT
 351  GCCGCTGCTG GCGxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx
 401  xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx
 451  xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx
 501  xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx
 551  xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx
 601  xxxxxxCAGC TTCCTTACGA CAAAAACGGT GCAAAGTCGG CACAAGGCAA
 651  CATATTGCCG CAACTGCTCG ACAGGCTGCT CGCCCACCCG TATTTCGCAC
 701  AACGCCACCC TAAAAGCACG GGGCGCGAAC TGTTTGCCAT AAATTGGCTC
 751  GAAACCTACC TTGACGGCGG CGAAAACCGA TACGACGTAT TGCGGACGCT
 801  TTCCCGTTTT ACCGCGCAAA CCGTTTGCGA CGCCGTCTCA CACGCAGCGG
 851  CAGATGCCCG TCAAATGTAC ATTTGCGACG GCGGCATCCG CAATCCTGTT
 901  TTAATGGCGG ATTTGGCAGA ATGTTTCGGC ACACGCGTTT CCCTGCACAG
 951  CACCGCCGAC CTGAACCTCG ATCCGCAATG GGTGGAAGCC GCCGnATTTG
1001  CGTGGTTGGC GGCGTGTTGG ATTAATCGCA TTCCCGGTAG TCCGCACAAA
1051  GCAACCGGCG CATCCAAACC GTGTATTCTG AnCGCGGGAT ATTATTATTG
1101  A
```

This corresponds to the amino acid sequence <SEQ ID 41; ORF 121>:

m121.pep

```
   1  METQLYIGIM SGTSMDGADA VLIRMDGGKW LGAEGHAFTP YPGRLRRQLL
  51  DLQDTGADEL HRSRILSQEL SRLYAQTAAE LLCSQNLAPS DITALGCHGQ
```

```
101  TVRHAPEHGY SIQLADLPLL Axxxxxxxxx xxxxxxxxxx xxxxxxxxxx
151  xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx
201  xxQLPYDKNG AKSAQGNILP QLLDRLLAHP YFAQRHPKST GRELFAINWL
251  ETYLDGGENR YDVLRTLSRF TAQTVCDAVS HAAADARQMY ICDGGIRNPV
301  LMADLAECFG TRVSLHSTAD LNLDPQWVEA AXFAWLAACW INRIPGSPHK
351  ATGASKPCIL XAGYYY*
```

The following partial DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 42>:

g121.seq

```
   1  ATGGAAACAC AGCTTTACAT CGGCATTATG TCGGGAACCA GTATGGACGG
  51  GGCGGATGCC GTGCTGGTAC GGATGGACGG CGGCAAATGG CTGGGCGCGG
 101  AAGGGCACGC CTTTACCCCC TACCCTGACC GGTTGCGCCG CAAATTGCTG
 151  GATTTGCAGG ACACAGGCAC AGACGAACTG CACCGCAGCA GGATGTTGTC
 201  GCAAGAACTC AGCCGCCTGT ACGCGCAAAC CGCCGCCGAA CTGCTGTGCA
 251  GTCAAAACCT CGCTCCGTGC GACATTACCG CCCTCGGCTG CCACGGGCAA
 301  ACCGTCCGAC ACGCGCCGGA ACACGGTtac AGCATACAGC TTGCCGATTT
 351  GCCGCTGCTG GCGGAACTGa cgcggatttT TACCGTCggc gacttcCGCA
 401  GCCGCGACCT TGCTGCCGGC GGacaAGGTG CGCCGCTCGT CCCCGCCTTT
 451  CACGAAGCCC TGTTCCGCGA TGACAGGGAA ACACGCGTGG TACTGAACAT
 501  CGGCGGGATT GCCAACATCA GCGTACTCCC CCCCGGCGCA CCCGCCTTCG
 551  GCTTCGACAC AGGGCCGGGC AATATGCTGA TGGAcgcgtg gacgcaggca
 601  cacTGGcagc TGCCTTACGA CAAAAacggt gcAAAGgcgg cacAAGGCAA
 651  catatTGCcg cAACTGCTCG gcaggctGCT CGCCcaccCG TATTTCTCAC
 701  AACCCcaccc aaAAAGCACG GGgcGCGaac TgtttgcccT AAattggctc
 751  gaaacctAcc ttgacggcgg cgaaaaccga tacgacgtat tgcggacgct
 801  ttcccgattc accgcgcaaA ccgTttggga cgccgtctca CACGCAGCGG
 851  CAGATGCCCG TCAAATGTAC ATTTGCGGCG GCGGCATCCG CAATCCTGTT
 901  TTAATGGCGG ATTTGGCAGA ATGTTTCGGC ACACGCGTTT CCCTGCACAG
 951  CACCGCCGAA CTGAACCTCG ATCCTCAATG GGTGGAGGCG gccgCATTtg
1001  cgtggttggC GGCGTGTTGG ATTAACCGCA TTCCCGGTAG TCCGCACAAA
1051  GCGACCGGCG CATCCAAACC GTGTATTCTG GGCGCGGGAT ATTATTATTG
1101  A
```

This corresponds to the amino acid sequence <SEQ ID 43; ORF 121.ng>:

g121.pep

```
  1  METQLYIGIM SGTSMDGADA VLVRMDGGKW LGAEGHAFTP YPDRLRRKLL
 51  DLQDTGTDEL HRSRMLSQEL SRLYAQTAAE LLCSQNLAPC DITALGCHGQ
101  TVRHAPEHGY SIQLADLPLL AELTRIFTVG DFRSRDLAAG GQGAPLVPAF
151  HEALFRDDRE TRVVLNIGGI ANISVLPPGA PAFGFDTGPG NMLMDAWTQA
201  HWQLPYDKNG AKAAQGNILP QLLGRLLAHP YFSQPHPKST GRELFALNWL
251  ETYLDGGENR YDVLRTLSRF TAQTVWDAVS HAAADARQMY ICGGGIRNPV
301  LMADLAECFG TRVSLHSTAE LNLDPQWVEA AAFAWLAACW INRIPGSPHK
351  ATGASKPCIL GAGYYY*
```

ORF 121 shows 73.5% identity over a 366 aa overlap with a predicted ORF (ORF121.ng) from *N. gonorrhoeae:*

m121/g121

```
                    10        20        30        40        50        60
m121.pep    METQLYIGIMSGTSMDGADAVLIRMDGGKWLGAEGHAFTPYPGRLRRQLLDLQDTGADEL
            |||||||||||||||||||||:||||||||||||||||||| ||||:||||||||:|||
g121        METQLYIGIMSGTSMDGADAVLVRMDGGKWLGAEGHAFTPYPDRLRRKLLDLQDTGTDEL
                    10        20        30        40        50        60
                    70        80        90       100       110       120
m121.pep    HRSRILSQELSRLYAQTAAELLCSQNLAPSDITALGCHGQTVRHAPEHGYSIQLADLPLL
            ||||:|||||||||||||||||||||||| ||||||||||||||||||||||||||||||
g121        HRSRMLSQELSRLYAQTAAELLCSQNLAPCDITALGCHGQTVRHAPEHGYSIQLADLPLL
                    70        80        90       100       110       120
                   130       140       150       160       170       180
```

```
m121.pep    AXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
            |  :    :                                       :
g121        AELTRIFTVGDFRSRDLAAGGQGAPLVPAFHEALFRDDRETRVVLNIGGIANISVLPPGA
                   130       140       150       160       170       180
                   190       200       210       220       230       240
m121.pep    XXXXXXXXXXXXXXXXXXXXXXQLPYDKNGAKSAQGNILPQLLDRLLAHPYFAQRHPKST
                   :          :     ||||||||||:|||||||||| ||||||||:| |||||
g121        PAFGFDTGPGNMLMDAWTQAHWQLPYDKNGAKAAQGNILPQLLGRLLAHPYFSQPHPKST
                   190       200       210       220       230       240
                   250       260       270       280       290       300
m121.pep    GRELFAINWLETYLDGGENRYDVLRTLSRFTAQTVCDAVSHAAADARQMYICDGGIRNPV
            ||||||:|||||||||||||||||||||||||||||| ||||||||||||||| |||||||
g121        GRELFALNWLETYLDGGENRYDVLRTLSRFTAQTVWDAVSHAAADARQMYICGGGIRNPV
                   250       260       270       280       290       300
                   310       320       330       340       350       360
m121.pep    LMADLAECFGTRVSLHSTADLNLDPQWVEAAXFAWLAACWINRIPGSPHKATGASKPCIL
            ||||||||||||||||||:|||||||||| ||||||||||||||||||||||||||||
g121        LMADLAECFGTRVSLHSTAELNLDPQWVEAAAFAWLAACWINRIPGSPHKATGASKPCIL
                   310       320       330       340       350       360

m121.pep    XAGYYYX
             ||||||
g121        GAGYYYX
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 44>:

```
a121.seq
     1  ATGGAAACAC AGCTTTACAT CGGCATCATG TCGGGAACCA GCATGGACGG
    51  GGCGGATGCC GTACTGATAC GGATGGACGG CGGCAAATGG CTGGGCGCGG
   101  AAGGGCACGC CTTTACCCCC TACCCCGGCA GGTTACGCCG CAAATTGCTG
   151  GATTTGCAGG ACACAGGCGC GGACGAACTG CACCGCAGCA GGATGTTGTC
   201  GCAAGAACTC AGCCGCCTGT ACGCGCAAAC CGCCGCCGAA CTGCTGTGCA
   251  GTCAAAACCT CGCGCCGTCC GACATTACCG CCCTCGGCTG CCACGGGCAA
   301  ACCGTCAGAC ACGCGCCGGA ACACAGTTAC AGCGTACAGC TTGCCGATTT
   351  GCCGCTGCTG GCGGAACGGA CTCAGATTTT TACCGTCGGC GACTTCCGCA
   401  GCCGCGACCT TGCGGCCGGC GGACAAGGCG CGCCGCTCGT CCCCGCCTTT
   451  CACGAAGCCC TGTTCCGCGA CGACAGGGAA ACACGCGCGG TACTGAACAT
   501  CGGCGGGATT GCCAACATCA GCGTACTCCC CCCCGACGCA CCCGCCTTCG
   551  GCTTCGACAC AGGACCGGGC AATATGCTGA TGGACGCGTG GATGCAGGCA
   601  CACTGGCAGC TTCCTTACGA CAAAAACGGT GCAAAGGCGG CACAAGGCAA
   651  CATATTGCCG CAACTGCTCG ACAGGCTGCT CGCCCACCCG TATTTCGCAC
   701  AACCCCACCC TAAAAGCACG GGGCGCGAAC TGTTTGCCCT AAATTGGCTC
   751  GAAACCTACC TTGACGGCGG CGAAAACCGA TACGACGTAT TGCGGACGCT
   801  TTCCCGATTC ACCGCGCAAA CCGTTTTCGA CGCCGTCTCA CACGCAGCGG
   851  CAGATGCCCG TCAAATGTAC ATTTGCGGCG GCGGCATCCG CAATCCTGTT
   901  TTAATGGCGG ATTTGGCAGA ATGTTTCGGC ACACGCGTTT CCCTGCACAG
   951  CACCGCCGAA CTGAACCTCG ATCCGCAATG GGTAGAAGCC GCCGCGTTCG
  1001  CATGGATGGC GGCGTGTTGG GTCAACCGCA TTCCCGGTAG TCCGCACAAA
  1051  GCAACCGGCG CATCCAAACC GTGTATTCTG GGCGCGGGAT ATTATTATTG
  1101  A
```

This corresponds to the amino acid sequence <SEQ ID 45; ORF 121.a>:

```
a121.pep
     1  METQLYIGIM SGTSMDGADA VLIRMDGGKW LGAEGHAFTP YPGRLRRKLL
    51  DLQDTGADEL HRSRMLSQEL SRLYAQTAAE LLCSQNLAPS DITALGCHGQ
   101  TVRHAPEHSY SVQLADLPLL AERTQIFTVG DFRSRDLAAG GQGAPLVPAF
   151  HEALFRDDRE TRAVLNIGGI ANISVLPPDA PAFGFDTGPG NMLMDAWMQA
   201  HWQLPYDKNG AKAAQGNILP QLLDRLLAHP YFAQPHPKST GRELFALNWL
   251  ETYLDGGENR YDVLRTLSRF TAQTVFDAVS HAAADARQMY ICGGGIRNPV
   301  LMADLAECFG TRVSLHSTAE LNLDPQWVEA AAFAWMAACW VNRIPGSPHK
```

```
351  ATGASKPCIL GAGYYY*
```

m121/a121 **ORFs 121 and 121.a** 74.0% identity in 366 aa overlap

```
                          10        20        30        40        50        60
m121.pep          METQLYIGIMSGTSMDGADAVLIRMDGGKWLGAEGHAFTPYPGRLRRQLLDLQDTGADEL
                  |||||||||||||||||||||||||||||||||||||||||||||||:||||||||||||
a121              METQLYIGIMSGTSMDGADAVLIRMDGGKWLGAEGHAFTPYPGRLRRKLLDLQDTGADEL
                          10        20        30        40        50        60

                          70        80        90       100       110       120
m121.pep          HRSRILSQELSRLYAQTAAELLCSQNLAPSDITALGCHGQTVRHAPEHGYSIQLADLPLL
                  ||||:|||||||||||||||||||||||||||||||||||||||||||:||:||||||||
a121              HRSRMLSQELSRLYAQTAAELLCSQNLAPSDITALGCHGQTVRHAPEHSYSVQLADLPLL
                          70        80        90       100       110       120

                         130       140       150       160       170       180
m121.pep          AXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                  |  :   :                                :
a121              AERTQIFTVGDFRSRDLAAGGQGAPLVPAFHEALFRDDRETRAVLNIGGIANISVLPPDA
                         130       140       150       160       170       180

                         190       200       210       220       230       240
m121.pep          XXXXXXXXXXXXXXXXXXXXXXQLPYDKNGAKSAQGNILPQLLDRLLAHPYFAQRHPKST
                        :               ||||||||||:||||||||||||||||||||| |||||
a121              PAFGFDTGPGNMLMDAWMQAHWQLPYDKNGAKAAQGNILPQLLDRLLAHPYFAQPHPKST
                         190       200       210       220       230       240

                         250       260       270       280       290       300
m121.pep          GRELFAINWLETYLDGGENRYDVLRTLSRFTAQTVCDAVSHAAADARQMYICDGGIRNPV
                  ||||||:|||||||||||||||||||||||||||| |||||||||||||||| |||||||
a121              GRELFALNWLETYLDGGENRYDVLRTLSRFTAQTVFDAVSHAAADARQMYICGGGIRNPV
                         250       260       270       280       290       300

                         310       320       330       340       350       360
m121.pep          LMADLAECFGTRVSLHSTADLNLDPQWVEAAXFAWLAACWINRIPGSPHKATGASKPCIL
                  |||||||||||||||||||:||||||||||| |||:||||:|||||||||||||||||||
a121              LMADLAECFGTRVSLHSTAELNLDPQWVEAAAFAWMAACWVNRIPGSPHKATGASKPCIL
                         310       320       330       340       350       360

m121.pep          XAGYYYX
                   ||||||
a121              GAGYYYX
```

Further work revealed the DNA sequence identified in *N. meningitidis* <SEQ ID 46>:

```
m121-1.seq
     1  ATGGAAACAC AGCTTTACAT CGGCATCATG TCGGGAACCA GCATGGACGG
    51  GGCGGATGCC GTACTGATAC GGATGGACGG CGGCAAATGG CTGGGCGCGG
   101  AAGGGCACGC CTTTACCCCC TACCCCGGCA GGTTACGCCG CCAATTGCTG
   151  GATTTGCAGG ACACAGGCGC AGACGAACTG CACCGCAGCA GGATTTTGTC
   201  GCAAGAACTC AGCCGCCTAT ATGCGCAAAC CGCCGCCGAA CTGCTGTGCA
   251  GTCAAAACCT CGCACCGTCC GACATTACCG CCCTCGGCTG CCACGGGCAA
   301  ACCGTCCGAC ACGCGCCGGA ACACGGTTAC AGCATACAGC TTGCCGATTT
   351  GCCGCTGCTG GCGGAACGGA CGCGGATTTT TACCGTCGGC GACTTCCGCA
   401  GCCGCGACCT TGCGGCCGGC GGACAAGGCG CGCCACTCGT CCCCGCCTTT
   451  CACGAAGCCC TGTTCCGCGA CAACAGGGAA ACACGCGCGG TACTGAACAT
   501  CGGCGGGATT GCCAACATCA GCGTACTCCC CCCCGACGCA CCCGCCTTCG
   551  GCTTCGACAC AGGGCCGGGC AATATGCTGA TGGACGCGTG GACGCAGGCA
   601  CACTGGCAGC TTCCTTACGA CAAAAACGGT GCAAAGGCGG CACAAGGCAA
   651  CATATTGCCG CAACTGCTCG ACAGGCTGCT CGCCCACCCG TATTTCGCAC
   701  AACCCCACCC TAAAAGCACG GGGCGCGAAC TGTTTGCCCT AAATTGGCTC
   751  GAAACCTACC TTGACGGCGG CGAAAACCGA TACGACGTAT TGCGGACGCT
```

```
 801  TTCCCGTTTT ACCGCGCAAA CCGTTTGCGA CGCCGTCTCA CACGCAGCGG
 851  CAGATGCCCG TCAAATGTAC ATTTGCGGCG GCGGCATCCG CAATCCTGTT
 901  TTAATGGCGG ATTTGGCAGA ATGTTTCGGC ACACGCGTTT CCCTGCACAG
 951  CACCGCCGAC CTGAACCTCG ATCCGCAATG GGTGGAAGCC GCCGNATTTG
1001  CGTGGTTGGC GGCGTGTTGG ATTAATCGCA TTCCCGGTAG TCCGCACAAA
1051  GCAACCGGCG CATCCAAACC GTGTATTCTG ANCGCGGGAT ATTATTATTG
1101  A
```

This corresponds to the amino acid sequence <SEQ ID 47; ORF 121-1>:

```
m121-1.pep
  1  METQLYIGIM SGTSMDGADA VLIRMDGGKW LGAEGHAFTP YPGRLRRQLL
 51  DLQDTGADEL HRSRILSQEL SRLYAQTAAE LLCSQNLAPS DITALGCHGQ
101  TVRHAPEHGY SIQLADLPLL AERTRIFTVG DFRSRDLAAG GQGAPLVPAF
151  HEALFRDNRE TRAVLNIGGI ANISVLPPDA PAFGFDTGPG NMLMDAWTQA
201  HWQLPYDKNG AKAAQGNILP QLLDRLLAHP YFAQPHPKST GRELFALNWL
251  ETYLDGGENR YDVLRTLSRF TAQTVCDAVS HAAADARQMY ICGGGIRNPV
301  LMADLAECFG TRVSLHSTAD LNLDPQWVEA AXFAWLAACW INRIPGSPHK
351  ATGASKPCIL XAGYYY*
```

m121-1/g121 ORFs 121-1 and 121-1.ng showed a 95.6% identity in 366 aa overlap

```
                     10        20        30        40        50        60
m121-1.pep   METQLYIGIMSGTSMDGADAVLIRMDGGKWLGAEGHAFTPYPGRLRRQLLDLQDTGADEL
             ||||||||||||||||||||||:||||||||||||||||| ||||:||||||||:|||
g121         METQLYIGIMSGTSMDGADAVLVRMDGGKWLGAEGHAFTPYPDRLRRKLLDLQDTGTDEL
                     10        20        30        40        50        60

                     70        80        90       100       110       120
m121-1.pep   HRSRILSQELSRLYAQTAAELLCSQNLAPSDITALGCHGQTVRHAPEHGYSIQLADLPLL
             ||||:||||||||||||||||||||||||| |||||||||||||||||||||||||||||
g121         HRSRMLSQELSRLYAQTAAELLCSQNLAPCDITALGCHGQTVRHAPEHGYSIQLADLPLL
                     70        80        90       100       110       120

                    130       140       150       160       170       180
m121-1.pep   AERTRIFTVGDFRSRDLAAGGQGAPLVPAFHEALFRDNRETRAVLNIGGIANISVLPPDA
             || ||||||||||||||||||||||||||||||||||:||||:||||||||||||||| |
g121         AELTRIFTVGDFRSRDLAAGGQGAPLVPAFHEALFRDDRETRVVLNIGGIANISVLPPGA
                    130       140       150       160       170       180

                    190       200       210       220       230       240
m121-1.pep   PAFGFDTGPGNMLMDAWTQAHWQLPYDKNGAKAAQGNILPQLLDRLLAHPYFAQPHPKST
             |||||||||||||||||||||||||||||||||||||||||| ||||||||:||||||
g121         PAFGFDTGPGNMLMDAWTQAHWQLPYDKNGAKAAQGNILPQLLGRLLAHPYFSQPHPKST
                    190       200       210       220       230       240

                    250       260       270       280       290       300
m121-1.pep   GRELFALNWLETYLDGGENRYDVLRTLSRFTAQTVCDAVSHAAADARQMYICGGGIRNPV
             |||||||||||||||||||||||||||||||||| |||||||||||||||||||||||||
g121         GRELFALNWLETYLDGGENRYDVLRTLSRFTAQTVWDAVSHAAADARQMYICGGGIRNPV
                    250       260       270       280       290       300

                    310       320       330       340       350       360
m121-1.pep   LMADLAECFGTRVSLHSTADLNLDPQWVEAAXFAWLAACWINRIPGSPHKATGASKPCIL
             ||||||||||||||||||:|||||||||||| ||||||||||||||||||||||||||||
g121         LMADLAECFGTRVSLHSTAELNLDPQWVEAAAFAWLAACWINRIPGSPHKATGASKPCIL
                    310       320       330       340       350       360

m121-1.pep   XAGYYYX
              ||||||
g121         GAGYYYX
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 48>:

```
a121-1.seq
   1  ATGGAAACAC AGCTTTACAT CGGCATCATG TCGGGAACCA GCATGGACGG
  51  GGCGGATGCC GTACTGATAC GGATGGACGG CGGCAAATGG CTGGGCGCGG
 101  AAGGGCACGC CTTTACCCCC TACCCCGGCA GGTTACGCCG CAAATTGCTC
 151  GATTTGCAGG ACACAGGCGC GGACGAACTG CACCGCAGCA GGATGTTGTC
 201  GCAAGAACTC AGCCGCCTGT ACGCGCAAAC CGCCGCCGAA CTGCTGTGCA
 251  GTCAAAACCT CGCGCCGTCC GACATTACCG CCCTCGGCTG CCACGGGCAA
 301  ACCGTCAGAC ACGCGCCGGA ACACAGTTAC AGCGTACAGC TTGCCGATTT
 351  GCCGCTGCTG GCGGAACGGA CTCAGATTTT TACCGTCGGC GACTTCCGCA
 401  GCCGCGACCT TGCGGCCGGC GCACAAGGCG CGCCGCTCGT CCCCGCCTTT
 451  CACGAAGCCC TGTTCCGCGA CGACAGGGAA ACACGCGCGG TACTGAACAT
 501  CGGCGGGATT GCCAACATCA GCGTACTCCC CCCCGACGCA CCCGCCTTCG
 551  GCTTCGACAC AGGACCGGGC AATATGCTGA TGGACGCGTG GATGCAGGCA
 601  CACTGGCAGC TTCCTTACGA CAAAAACGGT GCAAAGGCGG CACAAGGCAA
 651  CATATTGCCG CAACTGCTCG ACAGGCTGCT CGCCCACCCG TATTTCGCAC
 701  AACCCCACCC TAAAAGCACG GGGCGCGAAC TGTTTGCCCT AAATTGGCTC
 751  GAAACCTACC TTGACGGCGG CGAAAACCGA TACGACGTAT TGCGGACGCT
 801  TTCCCGATTC ACCGCGCAAA CCGTTTTCGA CGCCGTCTCA CACGCAGCGG
 851  CAGATGCCCG TCAAATGTAC ATTTGCGGCG GCGGCATCCG CAATCCTGTT
 901  TTAATGGCGG ATTTGGCAGA ATGTTTCGGC ACACGCGTTT CCCTGCACAG
 951  CACCCCCGAA CTGAACCTCG ATCCGCAATG GGTAGAAGCC GCCGCGTTCG
1001  CATGGATGGC GGCGTGTTGG GTCAACCGCA TTCCCGGTAG TCCGCACAAA
1051  GCAACCGGCG CATCCAAACC GTGTATTCTG GGCGCGGGAT ATTATTATTG
1101  A
```

This corresponds to the amino acid sequence <SEQ ID 49; ORF 121-1.a>:

```
a121-1.pep
   1  METQLYIGIM SGTSMDGADA VLIRMDGGKW LGAEGHAFTP YPGRLRRKLL
  51  DLQDTGADEL HRSRMLSQEL SRLYAQTAAE LLCSQNLAPS DITALGCHGQ
 101  TVRHAPEHSY SVQLADLPLL AERTQIFTVG DFRSRDLAAG GQGAPLVPAF
 151  HEALFRDDRE TRAVLNIGGI ANISVLPPDA PAFGFDTGPG NMLMDAWMQA
 201  HWQLPYDKNG AKAAQGNILP QLLDRLLAHP YFAQPHPKST GRELFALNWL
 251  ETYLDGGENR YDVLRTLSRF TAQTVFDAVS HAAADARQMY ICGGGIRNPV
 301  LMADLAECFG TRVSLHSTAE LNLDPQWVEA AAFAWMAACW VNRIPGSPHK
 351  ATGASKPCIL GAGYYY*
```

m121-1/a121-1 ORFs 121-1 and 121-1.a showed a 96.4% identity in 366 aa overlap

```
                        10        20        30        40        50        60
m121-1.pep     METQLYIGIMSGTSMDGADAVLIRMDGGKWLGAEGHAFTPYPGRLRRQLLDLQDTGADEL
               |||||||||||||||||||||||||||||||||||||||||||||||:||||||||||||
a121-1         METQLYIGIMSGTSMDGADAVLIRMDGGKWLGAEGHAFTPYPGRLRRKLLDLQDTGADEL
                        10        20        30        40        50        60

                        70        80        90       100       110       120
m121-1.pep     HRSRILSQELSRLYAQTAAELLCSQNLAPSDITALGCHGQTVRHAPEHGYSIQLADLPLL
               ||||:|||||||||||||||||||||||||||||||||||||||||||:||:||||||||
a121-1         HRSRMLSQELSRLYAQTAAELLCSQNLAPSDITALGCHGQTVRHAPEHSYSVQLADLPLL
                        70        80        90       100       110       120

                       130       140       150       160       170       180
m121-1.pep     AERTRIFTVGDFRSRDLAAGGQGAPLVPAFHEALFRDNRETRAVLNIGGIANISVLPPDA
               ||||:||||||||||||||||||||||||||||||||:||||||||||||||||||||||
a121-1         AERTQIFTVGDFRSRDLAAGGQGAPLVPAFHEALFRDDRETRAVLNIGGIANISVLPPDA
                       130       140       150       160       170       180

                       190       200       210       220       230       240
m121-1.pep     PAFGFDTGPGNMLMDAWTQAHWQLPYDKNGAKAAQGNILPQLLDRLLAHPYFAQPHPKST
               ||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||
a121-1         PAFGFDTGPGNMLMDAWMQAHWQLPYDKNGAKAAQGNILPQLLDRLLAHPYFAQPHPKST
                       190       200       210       220       230       240
```

```
                 250        260        270        280        290        300
m121-1.pep  GRELFALNWLETYLDGGENRYDVLRTLSRFTAQTVCDAVSHAAADARQMYICGGGIRNPV
            |||||||||||||||||||||||||||||||||||| ||||||||||||||||||||||||
a121-1      GRELFALNWLETYLDGGENRYDVLRTLSRFTAQTVFDAVSHAAADARQMYICGGGIRNPV
                 250        260        270        280        290        300

                 310        320        330        340        350        360
m121-1.pep  LMADLAECFGTRVSLHSTADLNLDPQWVEAAXFAWLAACWINRIPGSPHKATGASKPCIL
            ||||||||||||||||||:||||||||||| |||:||||:||||||||||||||||||||
a121        LMADLAECFGTRVSLHSTAELNLDPQWVEAAAFAWMAACWVNRIPGSPHKATGASKPCIL
                 310        320        330        340        350        360

m121-1.pep  XAGYYYX
             ||||||
a121        GAGYYYX
```

128 and 128-1

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 50>:

```
m128.seq  (partial)
       1  ATGACTGACA ACGCACTGCT CCATTTGGGC GAAGAACCCC GTTTTGATCA
      51  AATCAAAACC GAAGACATCA AACCCGCCCT GCAAACCGCC ATCGCCGAAG
     101  CGCGCGAACA AATCGCCGCC ATCAAAGCCC AAACGCACAC CGGCTGGGCA
     151  AACACTGTCG AACCCCTGAC CGGCATCACC GAACGCGTCG GCAGGATTTG
     201  GGGCGTGGTG TCGCACCTCA ACTGCGTCGC CGACACGCCC GAACTGCGCG
     251  CCGTCTATAA CGAACTGATG CCCGAAATCA CCGTCTTCTT CACCGAAATC
     301  GGACAAGACA TCGAGCTGTA CAACCGCTTC AAAACCATCA AAAATTCCCC
     351  CGAATTCGAC ACCCTCTCCC CCGCACAAAA AACCAAACTC AACCAC
       1  TACGCCAGCG AAAAACTGCG CGAAGCCAAA TACGCGTTCA GCGAAACCGA
      51  wGTCAAAAAA TAyTTCCCyG TCGGCAAwGT ATTAAACGGA CTGTTCGCCC
     101  AAmTCAAAAA ACTmTACGGC ATCGGATTTA CCGAAAAAAC yGTCCCCGTC
     151  TGGCACAAAG ACGTGCGCTA TTkTGAATTG CAACAAAACG GCGAAmCCAT
     201  AGGCGGCGTT TATATGGATT TGTACGCACG CGAAGGCAAA CGCGGCGGCG
     251  CGTGGATGAA CGACTACAAA GGCCGCCGCC GTTTTTCAGA CGGCACGCTG
     301  CAAyTGCCCA CCGCCTACCT CGTCTGCAAC TTCGCCCCAC CCGTCGGCGG
     351  CAGGGAAGCC CGCyTGAGCC ACGACGAAAT CCTCATCCTC TTCCACGAAA
     401  CCGGACACGG GCTGCACCAC CTGCTTACCC AAGTGGACGA ACTGGGCGTA
     451  TCCGGCATCA ACGGCGTAkA ATGGGACGCG GTCGAACTGC CCAGCCAGTT
     501  TATGGAAAAT TTCGTTTGGG AATACAATGT CTTGGCACAA mTGTCAGCCC
     551  ACGAAGAAAC CGGcgTTCCC yTGCCGAAAG AACTCTTsGA CAAAwTGCTC
     601  GCCGCCAAAA ACTTCCAAsG CGGCATGTTC yTsGTCCGGC AAwTGGAGTT
     651  CGCCCTCTTT GATATGATGA TTTACAGCGA AGACGACGAA GGCCGTCTGA
     701  AAAACTGGCA ACAGGTTTTA GACAGCGTGC GCAAAAAAGT CGCCGTCATC
     751  CAGCCGCCCG AATACAACCG CTTCGCCTTG AGCTTCGGCC ACATCTTCGC
     801  AGGCGGCTAT TCCGCAGCTn ATTACAGCTA CGCGTGGGCG GAAGTATTGA
     851  GCGCGGACGC ATACGCCGCC TTTGAAGAAA GCGACGATGT CGCCGCCACA
     901  GGCAAACGCT TTTGGCAGGA AATCCTCGCC GTCGGGGnAT CGCGCAGCGG
     951  nGCAGAATCC TTCAAAGCCT TCCGCGGCCG CGAACCGAGC ATAGACGCAC
    1001  TCTTGCGCCA CAGCGGTTTC GACAACGCGG TCTGA
```

This corresponds to the amino acid sequence <SEQ ID 51; ORF 128>:

```
m128.pep   (partial)
       1  MTDNALLHLG EEPRFDQIKT EDIKPALQTA IAEAREQIAA IKAQTHTGWA
      51  NTVEPLTGIT ERVGRIWGVV SHLNCVADTP ELRAVYNELM PEITVFFTEI
     101  GQDIELYNRF KTIKNSPEFD TLSPAQKTKL NH
//
       1  YASEKLREAK YAFSETXVKK YFPVGXVLNG LFAQXKKLYG IGFTEKTVPV
```

```
 51  WHKDVRYXEL QQNGEXIGGV YMDLYAREGK RGGAWMNDYK GRRRFSDGTL
101  QLPTAYLVCN FAPPVGGREA RLSHDEILIL FHETGHGLHH LLTQVDELGV
151  SGINGVXWDA VELPSQFMEN FVWEYNVLAQ XSAHEETGVP LPKELXDKXL
201  AAKNFQXGMF XVRQXEFALF DMMIYSEDDE GRLKNWQQVL DSVRKKVAVI
251  QPPEYNRFAL SFGHIFAGGY SAAXYSYAWA EVLSADAYAA FEESDDVAAT
301  GKRFWQEILA VGXSRSGAES FKAFRGREPS IDALLRHSGF DNAV*
```

The following partial DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 52>:

```
g128.seq
   1  atgattgaca acgCActgct ccacttgggc gaagaaccCC GTTTTaatca
  51  aatccaaacc gaagACAtca AACCCGCCGT CCAAACCGCC ATCGCCGAAG
 101  CGCGCGGACA AATCGCCGCC GTCAAAGCGC AAACGCACAC CGGCTGGGCG
 151  AACACCGTCG AGCGTCTGAC CGGCATCACC GAACGCGTCG GCAGGATTTG
 201  GGGCGTCGTG TCCCATCTCA ACTCCGTCGT CGACACGCCC GAACTGCGCG
 251  CCGTCTATAA CGAACTGATG CCTGAAATCA CCGTCTTCTT CACCGAAATC
 301  GGACAAGACA TCGAACTGTA CAACCGCTTC AAAACCATCA AAAATTCCCC
 351  CGAATTTGCA ACGCTTTCCC CCGCACAAAA AACCAAGCTC GATCACGACC
 401  TGCGCGATTT CGTATTGAGC GGCGCGGAAC TGCCGCCCGA ACGGCAGGCA
 451  GAACTGGCAA AACTGCAAAC CGAAGGCGCG CAACTTTCCG CCAAATTCTC
 501  CCAAAACGTC CTAGACGCGA CCGACGCGTT CGGCATTTAC TTTGACGATG
 551  CCGCACCGCT TGCCGGCATT CCCGAAGACG CGCTCGCCAT GTTTGCCGCC
 601  GCCGCGCAAA GCGAAGGCAA AACAGGTTAC AAAATCGGCT TGCAGATTCC
 651  GCACTACCTT GCCGTTATCC AATACGCCGG CAACCGCGAA CTGCGCGAAC
 701  AAATCTACCG CGCCTACGTT ACCCGTGCCA GCGAACTTTC AAACGACGGC
 751  AAATTCGACA ACACCGCCAA CATCGACCGC ACGCTCGAAA ACGCATTGAA
 801  AACCGCcaaa cTGCTCGGCT TTAAAAATTA CGCCGAATTG TCGCTGGCAA
 851  CCAAAATGGC GGACACGCCC GAACAGGTTT TAAACTTCCT GCACGACCTC
 901  GCCCGCCGCG CCAAACCCTA CGCCGAAAAA GACCTCGCCG AAGTCAAAGC
 951  CTTCGCCCGC GAACACCTCG GTCTCGCCGA CCCGCAGCCG TGGGACTTGA
1001  GCTACGCCGG CGAAAAACTG CGCGAAGCCA AATACGCATT CAGCGAAACC
1051  GAAGTCAAAA AATACTTCCC CGTCGGCAAA GTTCTGGCAG GCCTGTTCGC
1101  CCAAATCAAA AAACTCTACG GCATCGGATT CGCCGAAAAA ACCGTTCCCG
1151  TCTGGCACAA AGACGTGCGC TATTTTGAAT TGCAACAAAA CGGCAAAACC
1201  ATCGGCGGCG TTTATATGGA TTTGTACGCA CGCGAAGGCA AACGCGGCGG
1251  CGCGTGGATG AACGACtaca AAGGCCGCCG CCGCTTTGCC GACGgcacGC
1301  TGCAACTGCC CACCGCCTAC CTCGTCTGCA ACTTCGCCCC GCCCGTCGGC
1351  GGCAAAGAAG CGCGTTTAAG CCACGACGAA ATCCTCACCC TCTTCCACGA
1401  AacCGGCCAC GGACTGCACC ACCTGCTTAC CCAAGTGGAC GAACTGGGCG
1451  TGTCCGGCAT CAAcggcgtA GAATGGGACG CGGTCGAACT GCCCAGCCAG
1501  TTTATGGAAA ACTTCGTTTG GGAATACAAT GTATTGGCAC AAATGTCCGC
1551  CCACGAAGAA AccgGCGAGC CCCTGCCGAA AGAACTCTTC GACAAAATGC
1601  TcgcCGCCAA AAACTTCCAG CGCGGTATGT TCCTCGTCCG GCAAATGGAG
1651  TTCGCCCTCT TCGATATGAT GATTTACAGT GAAAGCGACG AATGCCGTCT
1701  GAAAAACTGG CAGCAGGTTT TAGACAGCGT GCGCAAAGAA GTcGCCGTCA
1751  TCCAACCGCC CGAATACAAC CGCTTCGCCA ACAGCTTCGG CCacatctTC
1801  GCcggcGGCT ATTCCGCAGG CTATTACAGC TACGCATGGG CCGAAGTCCt
1851  cAGCACCGAT GCCTACGCCG CCTTTGAAGA AAGcGACGac gtcGCCGCCA
1901  CAGGCAAACG CTTCTGGCAA GAAAtccttg ccgtcggcgg ctCCCGCAGC
1951  gcgGCGGAAT CCTTCAAAGC CTTCCGCGGA CGCGAACCGA GCATAGACGC
2001  ACTGCTGCGC CAaagcggtT TCGACAACGC gGCttgA
```

This corresponds to the amino acid sequence <SEQ ID 53; ORF 128.ng>:

```
g128.pep
   1  MIDNALLHLG EEPRFNQIQT EDIKPAVQTA IAEARGQIAA VKAQTHTGWA
  51  NTVERLTGIT ERVGRIWGVV SHLNSVVDTP ELRAVYNELM PEITVFFTEI
 101  GQDIELYNRF KTIKNSPEFA TLSPAQKTKL DHDLRDFVLS GAELPPERQA
 151  ELAKLQTEGA QLSAKFSQNV LDATDAFGIY FDDAAPLAGI PEDALAMFAA
 201  AAQSEGKTGY KIGLQIPHYL AVIQYAGNRE LREQIYRAYV TRASELSNDG
```

```
251  KFDNTANIDR TLENALKTAK LLGFKNYAEL SLATKMADTP EQVLNFLHDL
301  ARRAKPYAEK DLAEVKAFAR EHLGLADPQP WDLSYAGEKL REAKYAFSET
351  EVKKYFPVGK VLAGLFAQIK KLYGIGFAEK TVPVWHKDVR YFELQQNGKT
401  IGGVYMDLYA REGKRGGAWM NDYKGRRRFA DGTLQLPTAY LVCNFAPPVG
451  GKEARLSHDE ILTLFHETGH GLHHLLTQVD ELGVSGINGV EWDAVELPSQ
501  FMENFVWEYN VLAQMSAHEE TGEPLPKELF DKMLAAKNFQ RGMFLVRQME
551  FALFDMMIYS ESDECRLKNW QQVLDSVRKE VAVIQPPEYN RFANSFGHIF
601  AGGYSAGYYS YAWAEVLSTD AYAAFEESDD VAATGKRFWQ EILAVGGSRS
651  AAESFKAFRG REPSIDALLR QSGFDNAA*
```

ORF 128 shows 91.7% identity over a 475 aa overlap with a predicted ORF (ORF 128.ng) from *N. gonorrhoeae:*

m128/g128

```
                       10        20        30        40        50        60
g128.pep       MIDNALLHLGEEPRFNQIQTEDIKPAVQTAIAEARGQIAAVKAQTHTGWANTVERLTGIT
               | |||||||||||||:||:|||||||:|||||||| ||||:||||||||||||| |||||
m128           MTDNALLHLGEEPRFDQIKTEDIKPALQTAIAEAREQIAAIKAQTHTGWANTVEPLTGIT
                       10        20        30        40        50        60

                       70        80        90       100       110       120
g128.pep       ERVGRIWGVVSHLNSVVDTPELRAVYNELMPEITVFFTEIGQDIELYNRFKTIKNSPEFA
               |||||||||||||| |:|||||||||||||||||||||||||||||||||||||||||| 
m128           ERVGRIWGVVSHLNCVADTPELRAVYNELMPEITVFFTEIGQDIELYNRFKTIKNSPEFD
                       70        80        90       100       110       120

                      130       140       150       160       170       180
g128.pep       TLSPAQKTKLDHDLRDFVLSGAELPPERQAELAKLQTEGAQLSAKFSQNVLDATDAFGIY
               ||||||||||:|
m128           TLSPAQKTKLNH
                      130
                             //
                                             340       350       360
g128.pep                                 YAGEKLREAKYAFSETEVKKYFPVGKVLAG
                                         ||:||||||||||||| |||||||| || |
m128                                     YASEKLREAKYAFSETXVKKYFPVGXVLNG
                                                 10        20        30

                   370       380       390       400       410       420
g128.pep       LFAQIKKLYGIGFAEKTVPVWHKDVRYFELQQNGKTIGGVYMDLYAREGKRGGAWMNDYK
               |||| ||||||||:||||||||||||| ||||||::||||||||||||||||||||||||
m128           LFAQXKKLYGIGFTEKTVPVWHKDVRYXELQQNGEXIGGVYMDLYAREGKRGGAWMNDYK
                       40        50        60        70        80        90

                   430       440       450       460       470       480
g128.pep       GRRRFADGTLQLPTAYLVCNFAPPVGGKEARLSHDEILTLFHETGHGLHHLLTQVDELGV
               |||||:|||||||||||||||||||||:|||||||||| |||||||||||||||||||||
m128           GRRRFSDGTLQLPTAYLVCNFAPPVGGREARLSHDEILILFHETGHGLHHLLTQVDELGV
                      100       110       120       130       140       150

                   490       500       510       520       530       540
g128.pep       SGINGVEWDAVELPSQFMENFVWEYNVLAQMSAHEETGEPLPKELFDKMLAAKNFQRGMF
               |||||| ||||||||||||||||||||||| ||||||| |||||| || ||||||| |||
m128           SGINGVXWDAVELPSQFMENFVWEYNVLAQXSAHEETGVPLPKELXDKXLAAKNFQXGMF
                      160       170       180       190       200       210

                   550       560       570       580       590       600
```

```
g128.pep    LVRQMEFALFDMMIYSESDECRLKNWQQVLDSVRKEVAVIQPPEYNRFANSFGHIFAGGY
             ||| |||||||||||:|| ||||||||||||||:|||||||||||| |||||||||
m128        XVRQXEFALFDMMIYSEDDEGRLKNWQQVLDSVRKKVAVIQPPEYNRFALSFGHIFAGGY
                    220       230       240       250       260       270

               610       620       630       640       650       660
g128.pep    SAGYYSYAWAEVLSTDAYAAFEESDDVAATGKRFWQEILAVGGSRSAAESFKAFRGREPS
            ||: |||||||||:||||||||||||||||||||||||||| |||:||||||||||||
m128        SAAXYSYAWAEVLSADAYAAFEESDDVAATGKRFWQEILAVGXSRSGAESFKAFRGREPS
                    280       290       300       310       320       330

               670       679
g128.pep    IDALLRQSGFDNAAX
            ||||||:|||||:
m128        IDALLRHSGFDNAVX
                    340
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 54>:

```
a128.seq
      1  ATGACTGACA ACGCACTGCT CCATTTGGGC GAAGAACCCC GTTTTGATCA
     51  AATCAAAACC GAAGACATCA AACCCGCCCT GCAAACCGCC ATTGCCGAAG
    101  CGCGCGAACA AATCGCCGCC ATCAAAGCCC AAACGCACAC CGGCTGGGCA
    151  AACACTGTCG AACCCCTGAC CGGCATCACC GAACGCGTCG GCAGGATTTG
    201  GGGCGTGGTG TCGCACCTCA ACTCCGTCAC CGACACGCCC GAACTGCGCG
    251  CCGCCTACAA TGAATTAATG CCCGAAATTA CCGTCTTCTT CACCGAAATC
    301  GGACAAGACA TCGAGCTGTA CAACCGCTTC AAAACCATCA AAAACTCCCC
    351  CGAGTTCGAC ACCCTCTCCC ACGCGCAAAA AACCAAACTC AACCACGATC
    401  TGCGCGATTT CGTCCTCAGC GGCGCGGAAC TGCCGCCCGA ACAGCAGGCA
    451  GAATTGGCAA AACTGCAAAC CGAAGGCGCG CAACTTTCCG CCAAATTCTC
    501  CCAAAACGTC CTAGACGCGA CCGACGCGTT CGGCATTTAC TTTGACGATG
    551  CCGCACCGCT TGCCGGCATT CCCGAAGACG CGCTCGCCAT GTTTGCCGCT
    601  GCCGCGCAAA GCGAAGGCAA AACAGGCTAC AAAATCGGTT TGCAGATTCC
    651  GCACTACCTC GCCGTCATCC AATACGCCGA CAACCGCAAA CTGCGCGAAC
    701  AAATCTACCG CGCCTACGTT ACCCGCGCCA GCGAGCTTTC AGACGACGGC
    751  AAATTCGACA ACACCGCCAA CATCGACCGC ACGCTCGAAA ACGCCCTGCA
    801  AACCGCCAAA CTGCTCGGCT TCAAAAACTA CGCCGAATTG TCGCTGGCAA
    851  CCAAAATGGC GGACACCCCC GAACAAGTTT TAAACTTCCT GCACGACCTC
    901  GCCCGCCGCG CCAAACCCTA CGCCGAAAAA GACCTCGCCG AAGTCAAAGC
    951  CTTCGCCCGC GAAAGCCTCG GCCTCGCCGA TTTGCAACCG TGGGACTTGG
   1001  GCTACGCCGG CGAAAAACTG CGCGAAGCCA AATACGCATT CAGCGAAACC
   1051  GAAGTCAAAA AATACTTCCC CGTCGGCAAA GTATTAAACG GACTGTTCGC
   1101  CCAAATCAAA AAACTCTACG GCATCGGATT TACCGAAAAA ACCGTCCCCG
   1151  TCTGGCACAA AGACGTGCGC TATTTTGAAT TGCAACAAAA CGGCGAAACC
   1201  ATAGGCGGCG TTTATATGGA TTTGTACGCA CGCGAAGGCA AACGCGGCGG
   1251  CGCGTGGATG AACGACTACA AAGGCCGCCG CCGTTTTTCA GACGGCACGC
   1301  TGCAACTGCC CACCGCCTAC CTCGTCTGCA ACTTCACCCC GCCCGTCGGC
   1351  GGCAAAGAAG CCCGCTTGAG CCATGACGAA ATCCTCACCC TCTTCCACGA
   1401  AACCGGACAC GGCCTGCACC ACCTGCTTAC CCAAGTCGAC GAACTGGGCG
   1451  TATCCGGCAT CAACGGCGTA GAATGGGACG CAGTCGAACT GCCCAGTCAG
   1501  TTTATGGAAA ATTTCGTTTG GGAATACAAT GTCTTGGCGC AAATGTCCGC
   1551  CCACGAAGAA ACCGGCGTTC CCCTGCCGAA AGAACTCTTC GACAAAATGC
   1601  TCGCCGCCAA AAACTTCCAA CGCGGAATGT TCCTCGTCCG CCAAATGGAG
   1651  TTCGCCCTCT TTGATATGAT GATTTACAGC GAAGACGACG AAGGCCGTCT
   1701  GAAAAACTGG CAACAGGTTT TAGACAGCGT GCGCAAAGAA GTCGCCGTCG
   1751  TCCGACCGCC CGAATACAAC CGCTTCGCCA ACAGCTTCGG CCACATCTTC
   1801  GCAGGCGGCT ATTCCGCAGG CTATTACAGC TACGCGTGGG CGGAAGTATT
   1851  GAGCGCGGAC GCATACGCCG CCTTTGAAGA AAGCGACGAT GTCGCCGCCA
   1901  CAGGCAAACG CTTTTGGCAG GAAATCCTCG CCGTCGGCGG ATCGCGCAGC
   1951  GCGGCAGAAT CCTTCAAAGC CTTCCGCGGA CGCGAACCGA GCATAGACGC
   2001  ACTCTTGCGC CACAGCGGCT TCGACAACGC GGCTTGA
```

This corresponds to the amino acid sequence <SEQ ID 55; ORF 128.a>:

```
a128.pep
      1  MTDNALLHLG EEPRFDQIKT EDIKPALQTA IAEAREQIAA IKAQTHTGWA
     51  NTVEPLTGIT ERVGRIWGVV SHLNSVTDTP ELRAAYNELM PEITVFFTEI
    101  GQDIELYNRF KTIKNSPEFD TLSHAQKTKL NHDLRDFVLS GAELPPEQQA
    151  ELAKLQTEGA QLSAKFSQNV LDATDAFGIY FDDAAPLAGI PEDALAMFAA
    201  AAQSEGKTGY KIGLQIPHYL AVIQYADNRK LREQIYRAYV TRASELSDDG
    251  KFDNTANIDR TLENALQTAK LLGFKNYAEL SLATKMADTP EQVLNFLHDL
    301  ARRAKPYAEK DLAEVKAFAR ESLGLADLQP WDLGYAGEKL REAKYAFSET
    351  EVKKYFPVGK VLNGLFAQIK KLYGIGFTEK TVPVWHKDVR YFELQQNGET
    401  IGGVYMDLYA REGKRGGAWM NDYKGRRRFS DGTLQLPTAY LVCNFTPPVG
    451  GKEARLSHDE ILTLFHETGH GLHHLLTQVD ELGVSGINGV EWDAVELPSQ
    501  FMENFVWEYN VLAQMSAHEE TGVPLPKELF DKMLAAKNFQ RGMFLVRQME
    551  FALFDMMIYS EDDEGRLKNW QQVLDSVRKE VAVVRPPEYN RFANSFGHIF
    601  AGGYSAGYYS YAWAEVLSAD AYAAFEESDD VAATGKRFWQ EILAVGGSRS
    651  AAESFKAFRG REPSIDALLR HSGFDNAA*
```

m128/a128 ORFs 128 and 128.a showed a 66.0% identity in 677 aa overlap

```
                    10        20        30        40        50        60
m128.pep    MTDNALLHLGEEPRFDQIKTEDIKPALQTAIAEAREQIAAIKAQTHTGWANTVEPLTGIT
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a128        MTDNALLHLGEEPRFDQIKTEDIKPALQTAIAEAREQIAAIKAQTHTGWANTVEPLTGIT
                    10        20        30        40        50        60

                    70        80        90       100       110       120
m128.pep    ERVGRIWGVVSHLNCVADTPELRAVYNELMPEITVFFTEIGQDIELYNRFKTIKNSPEFD
            |||||||||||||| |:|||||||:|||||||||||||||||||||||||||||||||||
a128        ERVGRIWGVVSHLNSVTDTPELRAAYNELMPEITVFFTEIGQDIELYNRFKTIKNSPEFD
                    70        80        90       100       110       120

                   130
m128.pep    TLSPAQKTKLNH------------------------------------------------
            ||| ||||||||
a128        TLSHAQKTKLNHDLRDFVLSGAELPPEQQAELAKLQTEGAQLSAKFSQNVLDATDAFGIY
                   130       140       150       160       170       180

m128.pep    ------------------------------------------------------------

a128        FDDAAPLAGIPEDALAMFAAAAQSEGKTGYKIGLQIPHYLAVIQYADNRKLREQIYRAYV
                   190       200       210       220       230       240

m128.pep    ------------------------------------------------------------

a128        TRASELSDDGKFDNTANIDRTLENALQTAKLLGFKNYAELSLATKMADTPEQVLNFLHDL
                   250       260       270       280       290       300

                                                    140       150
m128.pep    ----------------------------------YASEKLREAKYAFSETXVKKYFPVGX
                                              ||:||||||||||||| |||||||
a128        ARRAKPYAEKDLAEVKAFARESLGLADLQPWDLGYAGEKLREAKYAFSETEVKKYFPVGK
                   310       320       330       340       350       360

            160       170       180       190       200       210
m128.pep    VLNGLFAQXKKLYGIGFTEKTVPVWHKDVRYXELQQNGEXIGGVYMDLYAREGKRGGAWM
            |||||||| |||||||||||||||||||||| ||||||:|||||||||||||||||||||
a128        VLNGLFAQIKKLYGIGFTEKTVPVWHKDVRYFELQQNGETIGGVYMDLYAREGKRGGAWM
                   370       380       390       400       410       420

            220       230       240       250       260       270
m128.pep    NDYKGRRRFSDGTLQLPTAYLVCNFAPPVGGREARLSHDEILILFHETGHGLHHLLTQVD
```

```
                 |||||||||||||||||||||||||:|||||:|||||||||| |||||||||||||||||
a128             NDYKGRRRFSDGTLQLPTAYLVCNFTPPVGGKEARLSHDEILTLFHETGHGLHHLLTQVD
                         430       440       450       460       470       480

                 280       290       300       310       320       330
m128.pep         ELGVSGINGVXWDAVELPSQFMENFVWEYNVLAQXSAHEETGVPLPKELXDKXLAAKNFQ
                 |||||||||| ||||||||||||||||||||||| |||||||||||||| || |||||||
a128             ELGVSGINGVEWDAVELPSQFMENFVWEYNVLAQMSAHEETGVPLPKELFDKMLAAKNFQ
                         490       500       510       520       530       540

                 340       350       360       370       380       390
m128.pep         XGMFXVRQXEFALFDMMIYSEDDEGRLKNWQQVLDSVRKKVAVIQPPEYNRFALSFGHIF
                  ||| ||| ||||||||||||||||||||||||||||||:|||::|||||||| ||||||
a128             RGMFLVRQMEFALFDMMIYSEDDEGRLKNWQQVLDSVRKEVAVVRPPEYNRFANSFGHIF
                         550       560       570       580       590       600

                 400       410       420       430       440       450
m128.pep         AGGYSAAXYSYAWAEVLSADAYAAFEESDDVAATGKRFWQEILAVGXSRSGAESFKAFRG
                 ||||||: |||||||||||||||||||||||||||||||||||||| |||:|||||||||
a128             AGGYSAGYYSYAWAEVLSADAYAAFEESDDVAATGKRFWQEILAVGGSRSAAESFKAFRG
                         610       620       630       640       650       660

                 460       470
m128.pep         REPSIDALLRHSGFDNAVX
                 ||||||||||||||||:
a128             REPSIDALLRHSGFDNAAX
                         670
```

Further work revealed the DNA sequence identified in *N. meningitidis* <SEQ ID 56>:

```
m128-1.seq
      1  ATGACTGACA ACGCACTGCT CCATTTGGGC GAAGAACCCC GTTTTGATCA
     51  AATCAAAACC GAAGACATCA AACCCGCCCT GCAAACCGCC ATCGCCGAAG
    101  CGCGCGAACA AATCGCCGCC ATCAAAGCCC AAACGCACAC CGGCTGGGCA
    151  AACACTGTCG AACCCCTGAC CGGCATCACC GAACGCGTCG GCAGGATTTG
    201  GGGCGTGGTG TCGCACCTCA ACTCCGTCGC CGACACGCCC GAACTGCGCG
    251  CCGTCTATAA CGAACTGATG CCCGAAATCA CCGTCTTCTT CACCGAAATC
    301  GGACAAGACA TCGAGCTGTA CAACCGCTTC AAAACCATCA AAAATTCCCC
    351  CGAATTCGAC ACCCTCTCCC CCGCACAAAA AACCAAACTC AACCACGATC
    401  TGCGCGATTT CGTCCTCAGC GGCGCGGAAC TGCCGCCCGA ACAGCAGGCA
    451  GAACTGGCAA AACTGCAAAC CGAAGGCGCG CAACTTTCCG CCAAATTCTC
    501  CCAAAACGTC CTAGACGCGA CCGACGCGTT CGGCATTTAC TTTGACGATG
    551  CCGCACCGCT TGCCGGCATT CCCGAAGACG CGCTCGCCAT GTTTGCCGCC
    601  GCCGCGCAAA GCGAAAGCAA AACAGGCTAC AAAATCGGCT TGCAGATTCC
    651  ACACTACCTC GCCGTCATCC AATACGCCGA CAACCGCGAA CTGCGCGAAC
    701  AAATCTACCG CGCCTACGTT ACCCGCGCCA GCGAACTTTC AGACGACGGC
    751  AAATTCGACA ACACCGCCAA CATCGACCGC ACGCTCGCAA ACGCCCTGCA
    801  AACCGCCAAA CTGCTCGGCT TCAAAAACTA CGCCGAATTG TCGCTGGCAA
    851  CCAAAATGGC GGACACGCCC GAACAAGTTT TAAACTTCCT GCACGACCTC
    901  GCCCGCCGCG CCAAACCCTA CGCCGAAAAA GACCTCGCCG AAGTCAAAGC
    951  CTTCGCCCGC GAAAGCCTGA ACCTCGCCGA TTTGCAACCG TGGGACTTGG
   1001  GCTACGCCAG CGAAAAACTG CGCGAAGCCA AATACGCGTT CAGCGAAACC
   1051  GAAGTCAAAA AATACTTCCC CGTCGGCAAA GTATTAAACG GACTGTTCGC
   1101  CCAAATCAAA AAACTCTACG GCATCGGATT TACCGAAAAA ACCGTCCCCG
   1151  TCTGGCACAA AGACGTGCGC TATTTTGAAT TGCAACAAAA CGGCGAAACC
   1201  ATAGGCGGCG TTTATATGGA TTTGTACGCA CGCGAAGGCA AACGCGGCGG
   1251  CGCGTGGATG AACGACTACA AAGGCCGCCG CCGTTTTTCA GACGGCACGC
   1301  TGCAACTGCC CACCGCCTAC CTCGTCTGCA ACTTCGCCCC ACCCGTCGGC
   1351  GGCAGGGAAG CCCGCCTGAG CCACGACGAA ATCCTCATCC TCTTCCACGA
   1401  AACCGGACAC GGGCTGCACC ACCTGCTTAC CCAAGTGGAC GAACTGGGCG
```

```
1451  TATCCGGCAT CAACGGCGTA GAATGGGACG CGGTCGAACT GCCCAGCCAG
1501  TTTATGGAAA ATTTCGTTTG GGAATACAAT GTCTTGGCAC AAATGTCAGC
1551  CCACGAAGAA ACCGGCGTTC CCCTGCCGAA AGAACTCTTC GACAAAATGC
1601  TCGCCGCCAA AAACTTCCAA CGCGGCATGT TCCTCGTCCG GCAAATGGAG
1651  TTCGCCCTCT TTGATATGAT GATTTACAGC GAAGACGACG AAGGCCGTCT
1701  GAAAAACTGG CAACAGGTTT TAGACAGCGT GCGCAAAAAA GTCGCCGTCA
1751  TCCAGCCGCC CGAATACAAC CGCTTCGCCT TGAGCTTCGG CCACATCTTC
1801  GCAGGCGGCT ATTCCGCAGG CTATTACAGC TACGCGTGGG CGGAAGTATT
1851  GAGCGCGGAC GCATACGCCG CCTTTGAAGA AAGCGACGAT GTCGCCGCCA
1901  CAGGCAAACG CTTTTGGCAG GAAATCCTCG CCGTCGGCGG ATCGCGCAGC
1951  GCGGCAGAAT CCTTCAAAGC CTTCCGCGGC CGCGAACCGA GCATAGACGC
2001  ACTCTTGCGC CACAGCGGTT TCGACAACGC GGTCTGA
```

This corresponds to the amino acid sequence <SEQ ID 57; ORF 128-1>:

```
m128-1.pep.
   1  MTDNALLHLG EEPRFDQIKT EDIKPALQTA IAEAREQIAA IKAQTHTGWA
  51  NTVEPLTGIT ERVGRIWGVV SHLNSVADTP ELRAVYNELM PEITVFFTEI
 101  GQDIELYNRF KTIKNSPEFD TLSPAQKTKL NHDLRDFVLS GAELPPEQQA
 151  ELAKLQTEGA QLSAKFSQNV LDATDAFGIY FDDAAPLAGI PEDALAMFAA
 201  AAQSESKTGY KIGLQIPHYL AVIQYADNRE LREQIYRAYV TRASELSDDG
 251  KFDNTANIDR TLANALQTAK LLGFKNYAEL SLATKMADTP EQVLNFLHDL
 301  ARRAKPYAEK DLAEVKAFAR ESLNLADLQP WDLGYASEKL REAKYAFSET
 351  EVKKYFPVGK VLNGLFAQIK KLYGIGFTEK TVPVWHKDVR YFELQQNGET
 401  IGGVYMDLYA REGKRGGAWM NDYKGRRRFS DGTLQLPTAY LVCNFAPPVG
 451  GREARLSHDE ILILFHETGH GLHHLLTQVD ELGVSGINGV EWDAVELPSQ
 501  FMENFVWEYN VLAQMSAHEE TGVPLPKELF DKMLAAKNFQ RGMFLVRQME
 551  FALFDMMIYS EDDEGRLKNW QQVLDSVRKK VAVIQPPEYN RFALSFGHIF
 601  AGGYSAGYYS YAWAEVLSAD AYAAFEESDD VAATGKRFWQ EILAVGGSRS
 651  AAESFKAFRG REPSIDALLR HSGFDNAV*
```

The following partial DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 58>:

```
g128-1.seq  (partial)
   1  ATGATTGACA ACGCACTGCT CCACTTGGGC GAAGAACCCC GTTTTAATCA
  51  AATCAAAACC GAAGACATCA AACCCGCCGT CCAAACCGCC ATCGCCGAAG
 101  CGCGCGGACA AATCGCCGCC GTCAAAGCGC AAACGCACAC CGGCTGGGCG
 151  AACACCGTCG AGCGTCTGAC CGGCATCACC GAACGCGTCG GCAGGATTTG
 201  GGGCGTCGTG TCCCATCTCA ACTCCGTCGT CGACACGCCC GAACTGCGCG
 251  CCGTCTATAA CGAACTGATG CCTGAAATCA CCGTCTTCTT CACCGAAATC
 301  GGACAAGACA TCGAACTGTA CAACCGCTTC AAAACCATCA AAAATTCCCC
 351  CGAATTTGCA ACGCTTTCCC CCGCACAAAA AACCAAGCTC GATCACGACC
 401  TGCGCGATTT CGTATTGAGC GGCGCGGAAC TGCCGCCCGA ACGGCAGGCA
 451  GAACTGGCAA AACTGCAAAC CGAAGGCGCG CAACTTTCCG CCAAATTCTC
 501  CCAAAACGTC CTAGACGCGA CCGACGCGTT CGGCATTTAC TTTGACGATG
 551  CCGCACCGCT TGCCGGCATT CCCGAAGACG CGCTCGCCAT GTTTGCCGCC
 601  GCCGCGCAAA GCGAAGGCAA AACAGGTTAC AAAATCGGCT TGCAGATTCC
 651  GCACTACCTT GCCGTTATCC AATACGCCGG CAACCGCGAA CTGCGCGAAC
 701  AAATCTACCG CGCCTACGTT ACCCGTGCCA GCGAACTTTC AAACGACGGC
 751  AAATTCGACA ACACCGCCAA CATCGACCGC ACGCTCGAAA ACGCATTGAA
 801  AACCGCCAAA CTGCTCGGCT TTAAAAATTA CGCCGAATTG TCGCTGGCAA
 851  CCAAAATGGC GGACACGCCC GAACAGGTTT TAAACTTCCT GCACGACCTC
 901  GCCCGCCGCG CCAAACCCTA CGCCGAAAAA GACCTCGCCG AAGTCAAAGC
 951  CTTCGCCCGC GAACACCTCG GTCTCGCCGA CCCGCAGCCG TGGGACTTGA
1001  GCTACGCCGG CGAAAAACTG CGCGAAGCCA AATACGCATT CAGCGAAACC
1051  GAAGTCAAAA AATACTTCCC CGTCGGCAAA GTTCTGGCAG GCCTGTTCGC
1101  CCAAATCAAA AAACTCTACG GCATCGGATT CGCCGAAAAA ACCGTTCCCG
1151  TCTGGCACAA AGACGTGCGC TATTTTGAAT TGCAACAAAA CGGCAAAACC
1201  ATCGGCGGCG TTTATATGGA TTTGTACGCA CGCGAAGGCA AACGCGGCGG
1251  CGCGTGGATG AACGACTACA AAGGCCGCCG CCGCTTTGCC GACGGCACGC
1301  TGCAACTGCC CACCGCCTAC CTCGTCTGCA ACTTCGCCCC GCCCGTCGGC
1351  GGCAAAGAAG CGCGTTTAAG CCACGACGAA ATCCTCACCC TCTTCCACGA
1401  AACCGGCCAC GGACTGCACC ACCTGCTTAC CCAAGTGGAC GAACTGGGCG
1451  TGTCCGGCAT CAACGGCGTA AAA
```

This corresponds to the amino acid sequence <SEQ ID 59; ORF 128-1.ng>:

```
g128-1.pep  (partial)
      1  MIDNALLHLG EEPRFNQIKT EDIKPAVQTA IAEARGQIAA VKAQTHTGWA
     51  NTVERLTGIT ERVGRIWGVV SHLNSVVDTP ELRAVYNELM PEITVFFTEI
    101  GQDIELYNRF KTIKNSPEFA TLSPAQKTKL DHDLRDFVLS GAELPPERQA
    151  ELAKLQTEGA QLSAKFSQNV LDATDAFGIY FDDAAPLAGI PEDALAMFAA
    201  AAQSEGKTGY KIGLQIPHYL AVIQYAGNRE LREQIYRAYV TRASELSNDG
    251  KFDNTANIDR TLENALKTAK LLGFKNYAEL SLATKMADTP EQVLNFLHDL
    301  ARRAKPYAEK DLAEVKAFAR EHLGLADPQP WDLSYAGEKL REAKYAFSET
    351  EVKKYFPVGK VLAGLFAQIK KLYGIGFAEK TVPVWHKDVR YFELQQNGKT
    401  IGGVYMDLYA REGKRGGAWM NDYKGRRRFA DGTLQLPTAY LVCNFAPPVG
    451  GKEARLSHDE ILTLFHETGH GLHHLLTQVD ELGVSGINGV K
```

m128-1/g128-1 ORFs 128-1 and 128-1.ng showed a 94.5% identity in 491 aa overlap

```
                      10        20        30        40        50        60
g128-1.pep    MIDNALLHLGEEPRFNQIKTEDIKPAVQTAIAEARGQIAAVKAQTHTGWANTVERLTGIT
              | |||||||||||:|||||||||:||||||| ||||:||||||||||||| |||||
m128-1        MTDNALLHLGEEPRFDQIKTEDIKPALQTAIAEAREQIAAIKAQTHTGWANTVEPLTGIT
                      10        20        30        40        50        60

                      70        80        90       100       110       120
g128-1.pep    ERVGRIWGVVSHLNSVVDTPELRAVYNELMPEITVFFTEIGQDIELYNRFKTIKNSPEFA
              ||||||||||||||:|||||||||||||||||||||||||||||||||||||||||||||
m128-1        ERVGRIWGVVSHLNSVADTPELRAVYNELMPEITVFFTEIGQDIELYNRFKTIKNSPEFD
                      70        80        90       100       110       120

                     130       140       150       160       170       180
g128-1.pep    TLSPAQKTKLDHDLRDFVLSGAELPPERQAELAKLQTEGAQLSAKFSQNVLDATDAFGIY
              ||||||||||:||||||||||||||||:||||||||||||||||||||||||||||||||
m128-1        TLSPAQKTKLNHDLRDFVLSGAELPPEQQAELAKLQTEGAQLSAKFSQNVLDATDAFGIY
                     130       140       150       160       170       180

                     190       200       210       220       230       240
g128-1.pep    FDDAAPLAGIPEDALAMFAAAAQSEGKTGYKIGLQIPHYLAVIQYAGNRELREQIYRAYV
              ||||||||||||||||||||||||:|||||||||||||||||||| ||||||||||||
m128-1        FDDAAPLAGIPEDALAMFAAAAQSESKTGYKIGLQIPHYLAVIQYADNRELREQIYRAYV
                     190       200       210       220       230       240

                     250       260       270       280       290       300
g128-1.pep    TRASELSNDGKFDNTANIDRTLENALKTAKLLGFKNYAELSLATKMADTPEQVLNFLHDL
              |||||||:||||||||||||||| |||:||||||||||||||||||||||||||||||||
m128-1        TRASELSDDGKFDNTANIDRTLANALQTAKLLGFKNYAELSLATKMADTPEQVLNFLHDL
                     250       260       270       280       290       300

                     310       320       330       340       350       360
g128-1.pep    ARRAKPYAEKDLAEVKAFAREHLGLADPQPWDLSYAGEKLREAKYAFSETEVKKYFPVGK
              |||||||||||||||||||||  |:||| |||||:||:||||||||||||||||||||||
m128-1        ARRAKPYAEKDLAEVKAFARESLNLADLQPWDLGYASEKLREAKYAFSETEVKKYFPVGK
                     310       320       330       340       350       360

                     370       380       390       400       410       420
g128-1.pep    VLAGLFAQIKKLYGIGFAEKTVPVWHKDVRYFELQQNGKTIGGVYMDLYAREGKRGGAWM
              || |||||||||||||:|||||||||||||||||||||:|||||||||||||||||||||
m128-1        VLNGLFAQIKKLYGIGFTEKTVPVWHKDVRYFELQQNGETIGGVYMDLYAREGKRGGAWM
                     370       380       390       400       410       420

                     430       440       450       460       470       480
g128-1.pep    NDYKGRRRFADGTLQLPTAYLVCNFAPPVGGKEARLSHDEILTLFHETGHGLHHLLTQVD
```

```
              |||||||||:||||||||||||||||||||:||||||||| ||||||||||||||||
m128-1        NDYKGRRRFSDGTLQLPTAYLVCNFAPPVGGREARLSHDEILILFHETGHGLHHLLTQVD
                     430       440       450       460       470       480

                     490
g128-1.pep    ELGVSGINGVK
              ||||||||||:
m128-1        ELGVSGINGVEWDAVELPSQFMENFVWEYNVLAQMSAHEETGVPLPKELFDKMLAAKNFQ
                     490       500       510       520       530       540
```

The following DNA sequence was identified in *N. meningitidis* <SEQ ID 60>:

```
a128-1.seq
   1  ATGACTGACA ACGCACTGCT CCATTTGGGC GAAGAACCCC GTTTTGATCA
  51  AATCAAAACC GAAGACATCA AACCCGCCCT GCAAACCGCC ATTGCCGAAG
 101  CGCGCGAACA AATCGCCGCC ATCAAAGCCC AAACGCACAC CGGCTGGGCA
 151  AACACTGTCG AACCCCTGAC CGGCATCACC GAACGCGTCG GCAGGATTTG
 201  GGGCGTGGTG TCGCACCTCA ACTCCGTCAC CGACACGCCC GAACTGCGCG
 251  CCGCCTACAA TGAATTAATG CCCGAAATTA CCGTCTTCTT CACCGAAATC
 301  GGACAAGACA TCGAGCTGTA CAACCGCTTC AAAACCATCA AAAACTCCCC
 351  CGAGTTCGAC ACCCTCTCCC ACGCGCAAAA AACCAAACTC AACCACGATC
 401  TGCGCGATTT CGTCCTCAGC GGCGCGGAAC TGCCGCCCGA ACAGCAGGCA
 451  GAATTGGCAA AACTGCAAAC CGAAGGCGCG CAACTTTCCG CCAAATTCTC
 501  CCAAAACGTC CTAGACGCGA CCGACGCGTT CGGCATTTAC TTTGACGATG
 551  CCGCACCGCT TGCCGGCATT CCCGAAGACG CGCTCGCCAT GTTTGCCGCT
 601  GCCGCGCAAA GCGAAGGCAA AACAGGCTAC AAAATCGGTT TGCAGATTCC
 651  GCACTACCTC GCCGTCATCC AATACGCCGA CAACCGCAAA CTGCGCGAAC
 701  AAATCTACCG CGCCTACGTT ACCCGCGCCA GCGAGCTTTC AGACGACGGC
 751  AAATTCGACA ACACCGCCAA CATCGACCGC ACGCTCGAAA ACGCCCTGCA
 801  AACCGCCAAA CTGCTCGGCT TCAAAAACTA CGCCGAATTG TCGCTGGCAA
 851  CCAAAATGGC GGACACCCCC GAACAAGTTT TAAACTTCCT GCACGACCTC
 901  GCCCGCCGCG CCAAACCCTA CGCCGAAAAA GACCTCGCCG AAGTCAAAGC
 951  CTTCGCCCGC GAAAGCCTCG GCCTCGCCGA TTTGCAACCG TGGGACTTGG
1001  GCTACGCCGG CGAAAAACTG CGCGAAGCCA AATACGCATT CAGCGAAACC
1051  GAAGTCAAAA AATACTTCCC CGTCGGCAAA GTATTAAACG GACTGTTCGC
1101  CCAAATCAAA AAACTCTACG GCATCGGATT TACCGAAAAA ACCGTCCCCG
1151  TCTGGCACAA AGACGTGCGC TATTTTGAAT TGCAACAAAA CGGCGAAACC
1201  ATAGGCGGCG TTTATATGGA TTTGTACGCA CGCGAAGGCA AACGCGGCGG
1251  CGCGTGGATG AACGACTACA AAGGCCGCCG CCGTTTTTCA GACGGCACGC
1301  TGCAACTGCC CACCGCCTAC CTCGTCTGCA ACTTCACCCC GCCCGTCGGC
1351  GGCAAAGAAG CCCGCTTGAG CCATGACGAA ATCCTCACCC TCTTCCACGA
1401  AACCGGACAC GGCCTGCACC ACCTGCTTAC CCAAGTCGAC GAACTGGGCG
1451  TATCCGGCAT CAACGGCGTA GAATGGGACG CAGTCGAACT GCCCAGTCAG
1501  TTTATGGAAA ATTTCGTTTG GGAATACAAT GTCTTGGCGC AAATGTCCGC
1551  CCACGAAGAA ACCGGCGTTC CCCTGCCGAA AGAACTCTTC GACAAAATGC
1601  TCGCCGCCAA AAACTTCCAA CGCGGAATGT TCCTCGTCCG CCAAATGGAG
1651  TTCGCCCTCT TTGATATGAT GATTTACAGC GAAGACGACG AAGGCCGTCT
1701  GAAAAACTGG CAACAGGTTT TAGACAGCGT GCGCAAAGAA GTCGCCGTCG
1751  TCCGACCGCC CGAATACAAC CGCTTCGCCA ACAGCTTCGG CCACATCTTC
1801  GCAGGCGGCT ATTCCGCAGG CTATTACAGC TACGCGTGGG CGGAAGTATT
1851  GAGCGCGGAC GCATACGCCG CCTTTGAAGA AAGCGACGAT GTCGCCGCCA
1901  CAGGCAAACG CTTTTGGCAG GAAATCCTCG CCGTCGGCGG ATCGCGCAGC
1951  GCGGCAGAAT CCTTCAAAGC CTTCCGCGGA CGCGAACCGA GCATAGACGC
2001  ACTCTTGCGC CACAGCGGCT TCGACAACGC GGCTTGA
```

This corresponds to the amino acid sequence <SEQ ID 61; ORF 128-1.a>:

```
a128-1.pep
   1  MTDNALLHLG EEPRFDQIKT EDIKPALQTA IAEAREQIAA IKAQTHTGWA
  51  NTVEPLTGIT ERVGRIWGVV SHLNSVTDTP ELRAAYNELM PEITVFFTEI
 101  GQDIELYNRF KTIKNSPEFD TLSHAQKTKL NHDLRDFVLS GAELPPEQQA
 151  ELAKLQTEGA QLSAKFSQNV LDATDAFGIY FDDAAPLAGI PEDALAMFAA
 201  AAQSEGKTGY KIGLQIPHYL AVIQYADNRK LREQIYRAYV TRASELSDDG
 251  KFDNTANIDR TLENALQTAK LLGFKNYAEL SLATKMADTP EQVLNFLHDL
```

```
301  ARRAKPYAEK DLAEVKAFAR ESLGLADLQP WDLGYAGEKL REAKYAFSET
351  EVKKYFPVGK VLNGLFAQIK KLYGIGFTEK TVPVWHKDVR YFELQQNGET
401  IGGVYMDLYA REGKRGGAWM NDYKGRRRFS DGTLQLPTAY LVCNFTPPVG
451  GKEARLSHDE ILTLFHETGH GLHHLLTQVD ELGVSGINGV EWDAVELPSQ
501  FMENFVWEYN VLAQMSAHEE TGVPLPKELF DKMLAAKNFQ RGMFLVRQME
551  FALFDMMIYS EDDEGRLKNW QQVLDSVRKE VAVVRPPEYN RFANSFGHIF
601  AGGYSAGYYS YAWAEVLSAD AYAAFEESDD VAATGKRFWQ EILAVGGSRS
651  AAESFKAFRG REPSIDALLR HSGFDNAA*
```

m128-1/a128-1 ORFs 128-1 and 128-1.a showed a 97.8% identity in 677 aa overlap

```
                      10        20        30        40        50        60
a128-1.pep    MTDNALLHLGEEPRFDQIKTEDIKPALQTAIAEAREQIAAIKAQTHTGWANTVEPLTGIT
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m128-1        MTDNALLHLGEEPRFDQIKTEDIKPALQTAIAEAREQIAAIKAQTHTGWANTVEPLTGIT
                      10        20        30        40        50        60

                      70        80        90       100       110       120
a128-1.pep    ERVGRIWGVVSHLNSVTDTPELRAAYNELMPEITVFFTEIGQDIELYNRFKTIKNSPEFD
              |||||||||||||||:||||||:|||||||||||||||||||||||||||||||||||||
m128-1        ERVGRIWGVVSHLNSVADTPELRAVYNELMPEITVFFTEIGQDIELYNRFKTIKNSPEFD
                      70        80        90       100       110       120

                     130       140       150       160       170       180
a128-1.pep    TLSHAQKTKLNHDLRDFVLSGAELPPEQQAELAKLQTEGAQLSAKFSQNVLDATDAFGIY
              ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m128-1        TLSPAQKTKLNHDLRDFVLSGAELPPEQQAELAKLQTEGAQLSAKFSQNVLDATDAFGIY
                     130       140       150       160       170       180

                     190       200       210       220       230       240
a128-1.pep    FDDAAPLAGIPEDALAMFAAAAQSEGKTGYKIGLQIPHYLAVIQYADNRKLREQIYRAYV
              ||||||||||||||||||||||||:|||||||||||||||||||||||||:|||||||||
m128-1        FDDAAPLAGIPEDALAMFAAAAQSESKTGYKIGLQIPHYLAVIQYADNRELREQIYRAYV
                     190       200       210       220       230       240

                     250       260       270       280       290       300
a128-1.pep    TRASELSDDGKFDNTANIDRTLENALQTAKLLGFKNYAELSLATKMADTPEQVLNFLHDL
              |||||||||||||||||||||| |||||||||||||||||||||||||||||||||||||
m128-1        TRASELSDDGKFDNTANIDRTLANALQTAKLLGFKNYAELSLATKMADTPEQVLNFLHDL
                     250       260       270       280       290       300

                     310       320       330       340       350       360
a128-1.pep    ARRAKPYAEKDLAEVKAFARESLGLADLQPWDLGYAGEKLREAKYAFSETEVKKYFPVGK
              ||||||||||||||||||||||:||||||||||||:||||||||||||||||||||||||
m128-1        ARRAKPYAEKDLAEVKAFARESLNLADLQPWDLGYASEKLREAKYAFSETEVKKYFPVGK
                     310       320       330       340       350       360

                     370       380       390       400       410       420
a128-1.pep    VLNGLFAQIKKLYGIGFTEKTVPVWHKDVRYFELQQNGETIGGVYMDLYAREGKRGGAWM
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m128-1        VLNGLFAQIKKLYGIGFTEKTVPVWHKDVRYFELQQNGETIGGVYMDLYAREGKRGGAWM
                     370       380       390       400       410       420

                     430       440       450       460       470       480
a128-1.pep    NDYKGRRRFSDGTLQLPTAYLVCNFTPPVGGKEARLSHDEILTLFHETGHGLHHLLTQVD
              |||||||||||||||||||||||||:|||||:|||||||||| |||||||||||||||||
m128-1        NDYKGRRRFSDGTLQLPTAYLVCNFAPPVGGREARLSHDEILILFHETGHGLHHLLTQVD
                     430       440       450       460       470       480

                     490       500       510       520       530       540
a128-1.pep    ELGVSGINGVEWDAVELPSQFMENFVWEYNVLAQMSAHEETGVPLPKELFDKMLAAKNFQ
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
m128-1        ELGVSGINGVEWDAVELPSQFMENFVWEYNVLAQMSAHEETGVPLPKELFDKMLAAKNFQ
                      490       500       510       520       530       540

                      550       560       570       580       590       600
a128-1.pep    RGMFLVRQMEFALFDMMIYSEDDEGRLKNWQQVLDSVRKEVAVVRPPEYNRFANSFGHIF
              |||||||||||||||||||||||||||||||||||||||:|||::|||||||| ||||||
m128-1        RGMFLVRQMEFALFDMMIYSEDDEGRLKNWQQVLDSVRKKVAVIQPPEYNRFALSFGHIF
                      550       560       570       580       590       600

                      610       620       630       640       650       660
a128-1.pep    AGGYSAGYYSYAWAEVLSADAYAAFEESDDVAATGKRFWQEILAVGGSRSAAESFKAFRG
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m128-1        AGGYSAGYYSYAWAEVLSADAYAAFEESDDVAATGKRFWQEILAVGGSRSAAESFKAFRG
                      610       620       630       640       650       660

                      670      679
a128-1.pep    REPSIDALLRHSGFDNAAX
              |||||||||||||||||:
m128-1        REPSIDALLRHSGFDNAVX
                      670
```

206

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 62>:

```
m206.seq
      1  ATGTTTCCCC CCGACAAAAC CCTTTTCCTC TGTCTCAGCG CACTGCTCCT
     51  CGCCTCATGC GGCACGACCT CCGGCAAACA CCGCCAACCG AAACCCAAAC
    101  AGACAGTCCG GCAAATCCAA GCCGTCCGCA TCAGCCACAT CGACCGCACA
    151  CAAGGCTCGC AGGAACTCAT GCTCCACAGC CTCGGACTCA TCGGCACGCC
    201  CTACAAATGG GGCGGCAGCA GCACCGCAAC CGGCTTCGAT TGCAGCGGCA
    251  TGATTCAATT CGTTTACAAr AACGCCCTCA ACGTCAAGCT GCCGCGCACC
    301  GCCCGCGACA TGGCGGCGGC AAGCCGsAAA ATCCCCGACA GCCGCyTCAA
    351  GGCCGGCGAC CTCGTATTCT TCAACACCGG CGGCGCACAC CGCTACTCAC
    401  ACGTCGGACT CTACATCGGC AACGGCGAAT TCATCCATGC CCCCAGCAGC
    451  GGCAAAACCA TCAAAACCGA AAAACTCTCC ACACCGTTTT ACGCCAAAAA
    501  CTACCTCGGC GCACATACTT TTTTACAGA ATGA
```

This corresponds to the amino acid sequence <SEQ ID 63; ORF 206>:

```
m206.pep..
      1  MFPPDKTLFL CLSALLLASC GTTSGKHRQP KPKQTVRQIQ AVRISHIDRT
     51  QGSQELMLHS LGLIGTPYKW GGSSTATGFD CSGMIQFVYK NALNVKLPRT
    101  ARDMAAASRK IPDSRXKAGD LVFFNTGGAH RYSHVGLYIG NGEFIHAPSS
    151  GKTIKTEKLS TPFYAKNYLG AHTFFTE*
```

The following partial DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 64>:

```
g206.seq
      1  atgttttccc ccgacaaaac ccttttcctc tgtctcggcg cactgctcct
     51  cgcctcatgc ggcacgacct ccggcaaaca ccgccaaccg aaacccaaac
    101  agacagtccg gcaaatccaa gccgtccgca tcagccacat cggccgcaca
    151  caaggctcgc aggaactcat gctccacagc ctcggactca tcggcacgcc
    201  ctacaaatgg ggcggcagca gcaccgcaac cggcttcgac tgcagcggca
    251  tgattcaatt ggtttacaaa aacgccctca acgtcaagct gccgcgcacc
    301  gcccgcgaca tggcggcggc aagccgcaaa atccccgaca gccgcctcaa
    351  ggccggcgac atcgtattct tcaacaccgg cggcgcacac cgctactcac
    401  acgtcggact ctacatcggc aacggcgaat tcatccatgc cccggcagc
    451  ggcaaaacca tcaaaaccga aaaactctcc acaccgtttt acgccaaaaa
    501  ctaccttgga gcgcatacgt tttttacaga atga
```

This corresponds to the amino acid sequence <SEQ ID 65; ORF 206.ng>:

```
g206.pep
      1  MFSPDKTLFL CLGALLLASC GTTSGKHRQP KPKQTVRQIQ AVRISHIGRT
     51  QGSQELMLHS LGLIGTPYKW GGSSTATGFD CSGMIQLVYK NALNVKLPRT
    101  ARDMAAASRK IPDSRLKAGD IVFFNTGGAH RYSHVGLYIG NGEFIHAPGS
    151  GKTIKTEKLS TPFYAKNYLG AHTFFTE*
```

ORF 206 shows 96.0% identity over a 177 aa overlap with a predicted ORF (ORF 206.ng) from *N. gonorrhoeae:*

```
m206/g206

                    10        20        30        40        50        60
m206.pep    MFPPDKTLFLCLSALLLASCGTTSGKHRQPKPKQTVRQIQAVRISHIDRTQGSQELMLHS
            || ||||||||:|||||||||||||||||||||||||||||||||| |||||||||||
g206        MFSPDKTLFLCLGALLLASCGTTSGKHRQPKPKQTVRQIQAVRISHIGRTQGSQELMLHS
                    10        20        30        40        50        60

                    70        80        90       100       110       120
m206.pep    LGLIGTPYKWGGSSTATGFDCSGMIQFVYKNALNVKLPRTARDMAAASRKIPDSRXKAGD
            ||||||||||||||||||||||||||:||||||||||||||||||||||||||| ||||
g206        LGLIGTPYKWGGSSTATGFDCSGMIQLVYKNALNVKLPRTARDMAAASRKIPDSRLKAGD
                    70        80        90       100       110       120

                   130       140       150       160       170
m206.pep    LVFFNTGGAHRYSHVGLYIGNGEFIHAPSSGKTIKTEKLSTPFYAKNYLGAHTFFTEX
            :||||||||||||||||||||||||||:|||||||||||||||||||||||||||
g206        IVFFNTGGAHRYSHVGLYIGNGEFIHAPGSGKTIKTEKLSTPFYAKNYLGAHTFFTE
                   130       140       150       160       170
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 66>:

```
a206.seq
      1  ATGTTTCCCC CCGACAAAAC CCTTTTCCTC TGTCTCAGCG CACTGCTCCT
     51  CGCCTCATGC GGCACGACCT CCGGCAAACA CCGCCAACCG AAACCCAAAC
    101  AGACAGTCCG GCAAATCCAA GCCGTCCGCA TCAGCCACAT CGACCGCACA
    151  CAAGGCTCGC AGGAACTCAT GCTCCACAGC CTCGGACTCA TCGGCACGCC
    201  CTACAAATGG GGCGGCAGCA GCACCGCAAC CGGCTTCGAT TGCAGCGGCA
    251  TGATTCAATT CGTTTACAAA AACGCCCTCA ACGTCAAGCT GCCGCGCACC
    301  GCCCGCGACA TGGCGGCGGC AAGCCGCAAA ATCCCCGACA GCCGCCTTAA
    351  GGCCGGCGAC CTCGTATTCT TCAACACCGG CGGCGCACAC CGCTACTCAC
    401  ACGTCGGACT CTATATCGGC AACGGCGAAT TCATCCATGC CCCCAGCAGC
    451  GGCAAAACCA TCAAAACCGA AAAACTCTCC ACACCGTTTT ACGCCAAAAA
    501  CTACCTCGGC GCACATACTT TCTTTACAGA ATGA
```

This corresponds to the amino acid sequence <SEQ ID 67; ORF 206.a>:

```
a206.pep
      1  MFPPDKTLFL CLSALLLASC GTTSGKHRQP KPKQTVRQIQ AVRISHIDRT
     51  QGSQELMLHS LGLIGTPYKW GGSSTATGFD CSGMIQFVYK NALNVKLPRT
    101  ARDMAAASRK IPDSRLKAGD LVFFNTGGAH RYSHVGLYIG NGEFIHAPSS
    151  GKTIKTEKLS TPFYAKNYLG AHTFFTE*
```

m206/a206 ORFs 206 and 206.a showed a 99.4% identity in 177 aa overlap

```
                    10        20        30        40        50        60
m206.pep    MFPPDKTLFLCLSALLLASCGTTSGKHRQPKPKQTVRQIQAVRISHIDRTQGSQELMLHS
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a206        MFPPDKTLFLCLSALLLASCGTTSGKHRQPKPKQTVRQIQAVRISHIDRTQGSQELMLHS
                    10        20        30        40        50        60
```

```
                     70        80        90       100       110       120
m206.pep     LGLIGTPYKWGGSSTATGFDCSGMIQFVYKNALNVKLPRTARDMAAASRKIPDSRXKAGD
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||
a206         LGLIGTPYKWGGSSTATGFDCSGMIQFVYKNALNVKLPRTARDMAAASRKIPDSRLKAGD
                     70        80        90       100       110       120

                    130       140       150       160       170
m206.pep     LVFFNTGGAHRYSHVGLYIGNGEFIHAPSSGKTIKTEKLSTPFYAKNYLGAHTFFTEX
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a206         LVFFNTGGAHRYSHVGLYIGNGEFIHAPSSGKTIKTEKLSTPFYAKNYLGAHTFFTEX
                    130       140       150       160       170
```

287

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 68>:

```
m287.seq
   1  ATGTTTAAAC GCAGCGTAAT CGCAATGGCT TGTATTTTTG CCCTTTCAGC
  51  CTGCGGGGGC GGCGGTGGCG GATCGCCCGA TGTCAAGTCG GCGGACACGC
 101  TGTCAAAACC TGCCGCCCCT GTTGTTTCTG AAAAAGAGAC AGAGGCAAAG
 151  GAAGATGCGC CACAGGCAGG TTCTCAAGGA CAGGGCGCGC CATCCGCACA
 201  AGGCAGTCAA GATATGGCGG CGGTTTCGGA AGAAAATACA GGCAATGGCG
 251  GTGCGGTAAC AGCGGATAAT CCCAAAAATG AAGACGAGGT GGCACAAAAT
 301  GATATGCCGC AAAATGCCGC CGGTACAGAT AGTTCGACAC CGAATCACAC
 351  CCCGGATCCG AATATGCTTG CCGGAAATAT GGAAAATCAA GCAACGGATG
 401  CCGGGGAATC GTCTCAGCCG GCAAACCAAC CGGATATGGC AAATGCGGCG
 451  GACGGAATGC AGGGGGACGA TCCGTCGGCA GGCGGGCAAA ATGCCGGCAA
 501  TACGGCTGCC CAAGGTGCAA ATCAAGCCGG AAACAATCAA GCCGCCGGTT
 551  CTTCAGATCC CATCCCCGCG TCAAACCCTG CACCTGCGAA TGGCGGTAGC
 601  AATTTTGGAA GGGTTGATTT GGCTAATGGC GTTTTGATTG ACGGGCCGTC
 651  GCAAAATATA ACGTTGACCC ACTGTAAAGG CGATTCTTGT AGTGGCAATA
 701  ATTTCTTGGA TGAAGAAGTA CAGCTAAAAT CAGAATTTGA AAAATTAAGT
 751  GATGCAGACA AAATAAGTAA TTACAAGAAA GATGGGAAGA ATGATAAATT
 801  TGTCGGTTTG GTTGCCGATA GTGTGCAGAT GAAGGGAATC AATCAATATA
 851  TTATCTTTTA TAAACCTAAA CCCACTTCAT TTGCGCGATT TAGGCGTTCT
 901  GCACGGTCGA GGCGGTCGCT TCCGGCCGAG ATGCCGCTGA TTCCCGTCAA
 951  TCAGGCGGAT ACGCTGATTG TCGATGGGGA AGCGGTCAGC CTGACGGGGC
1001  ATTCCGGCAA TATCTTCGCG CCCGAAGGGA ATTACCGGTA TCTGACTTAC
1051  GGGGCGGAAA AATTGCCCGG CGGATCGTAT GCCCTTCGTG TTCAAGGCGA
1101  ACCGGCAAAA GGCGAAATGC TTGCGGGCGC GGCCGTGTAC AACGGCGAAG
1151  TACTGCATTT CCATACGGAA AACGGCCGTC CGTACCCGAC CAGGGGCAGG
1201  TTTGCCGCAA AAGTCGATTT CGGCAGCAAA TCTGTGGACG GCATTATCGA
1251  CAGCGGCGAT GATTTGCATA TGGGTACGCA AAAATTCAAA GCCGCCATCG
1301  ATGGAAACGG CTTTAAGGGG ACTTGGACGG AAAATGGCAG CGGGGATGTT
1351  TCCGGAAAGT TTTACGGCCC GGCCGGCGAG GAAGTGGCGG GAAAATACAG
1401  CTATCGCCCG ACAGATGCGG AAAAGGGCGG ATTCGGCGTG TTTGCCGGCA
1451  AAAAAGAGCA GGATTGA
```

This corresponds to the amino acid sequence <SEQ ID 69; ORF 287>:

```
m287.pep
   1  MFKRSVIAMA CIFALSACGG GGGGSPDVKS ADTLSKPAAP VVSEKETEAK
  51  EDAPQAGSQG QGAPSAQGSQ DMAAVSEENT GNGGAVTADN PKNEDEVAQN
 101  DMPQNAAGTD SSTPNHTPDP NMLAGNMENQ ATDAGESSQP ANQPDMANAA
 151  DGMQGDDPSA GGQNAGNTAA QGANQAGNNQ AAGSSDPIPA SNPAPANGGS
 201  NFGRVDLANG VLIDGPSQNI TLTHCKGDSC SGNNFLDEEV QLKSEFEKLS
 251  DADKISNYKK DGKNDKFVGL VADSVQMKGI NQYIIFYKPK PTSFARFRRS
 301  ARSRRSLPAE MPLIPVNQAD TLIVDGEAVS LTGHSGNIFA PEGNYRYLTY
```

```
351  GAEKLPGGSY ALRVQGEPAK GEMLAGAAVY NGEVLHFHTE NGRPYPTRGR
401  FAAKVDFGSK SVDGIIDSGD DLHMGTQKFK AAIDGNGFKG TWTENGSGDV
451  SGKFYGPAGE EVAGKYSYRP TDAEKGGFGV FAGKKEQD*
```

The following partial DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 70>:

```
g287.seq
   1  atgtttaaac gcagtgtgat tgcaatggct tgtatttttc cctttcagc
  51  ctgtgggggc ggcggtggcg gatcgcccga tgtcaagtcg gcggacacgc
 101  cgtcaaaacc ggccgccccc gttgttgctg aaaatgccgg ggaaggggtg
 151  ctgccgaaag aaaagaaaga tgaggaggca gcgggcggtg cgccgcaagc
 201  cgatacgcag gacgcaaccg ccggagaagg cagccaagat atggcggcag
 251  tttcggcaga aaatacaggc aatggcggtg cggcaacaac ggacaacccc
 301  aaaaatgaag acgcgggggc gcaaaatgat atgccgcaaa atgccgccga
 351  atccgcaaat caaacaggga acaaccaacc cgccggttct tcagattccg
 401  cccccgcgtc aaaccctgcc cctgcgaatg gcggtagcga ttttggaagg
 451  acgaacgtgg gcaattctgt tgtgattgac ggaccgtcgc aaaatataac
 501  gttgacccac tgtaaaggcg attcttgtaa tggtgataat ttattggatg
 551  aagaagcacc gtcaaaatca gaatttgaaa aattaagtga tgaagaaaaa
 601  attaagcgat ataaaaaaga cgagcaacgg gagaattttg tcggtttggt
 651  tgctgacagg gtaaaaaagg atggaactaa caaatatatc atcttctata
 701  cggacaaacc acctactcgt tctgcacggt cgaggaggtc gcttccggcc
 751  gagattccgc tgattcccgt caatcaggcc gatacgctga ttgtggatgg
 801  ggaagcggtc agcctgacgg ggcattccgg caatatcttc gcgcccgaag
 851  ggaattaccg gtatctgact tacggggcgg aaaaattgcc cggcggatcg
 901  tatgccctcc gtgtgcaagg cgaaccggca aaaggcgaaa tgcttgttgg
 951  cacggccgtg tacaacggcg aagtgctgca tttccatatg gaaaacggcc
1001  gtccgtaccc gtccggaggc aggtttgccg caaaagtcga tttcggcagc
1051  aaatctgtgg acggcattat cgacagcggc gatgatttgc atatgggtac
1101  gcaaaaattc aaagccgcca tcgatggaaa cggctttaag gggacttgga
1151  cggaaaatgg cggcggggat gtttccggaa ggttttacgg cccggccggc
1201  gaggaagtgg cgggaaaata cagctatcgc ccgacagatg ctgaaaaggg
1251  cggattcggc gtgtttgccg gcaaaaaaga tcgggattga
```

This corresponds to the amino acid sequence <SEQ ID 71; ORF 287.ng>:

```
g287.pep
   1  MFKRSVIAMA CIFPLSACGG GGGGSPDVKS ADTPSKPAAP VVAENAGEGV
  51  LPKEKKDEEA AGGAPQADTQ DATAGEGSQD MAAVSAENTG NGGAATTDNP
 101  KNEDAGAQND MPQNAAESAN QTGNNQPAGS SDSAPASNPA PANGGSDFGR
 151  TNVGNSVVID GPSQNITLTH CKGDSCNGDN LLDEEAPSKS EFEKLSDEEK
 201  IKRYKKDEQR ENFVGLVADR VKKDGTNKYI IFYTDKPPTR SARSRRSLPA
 251  EIPLIPVNQA DTLIVDGEAV SLTGHSGNIF APEGNYRYLT YGAEKLPGGS
 301  YALRVQGEPA KGEMLVGTAV YNGEVLHFHM ENGRPYPSGG RFAAKVDFGS
 351  KSVDGIIDSG DDLHMGTQKF KAAIDGNGFK GTWTENGGGD VSGRFYGPAG
 401  EEVAGKYSYR PTDAEKGGFG VFAGKKDRD*
```

m287/g287 ORFs 287 and 287.ng showed a 70.1% identity in 499 aa overlap

```
                   10        20        30        40                  49
m287.pep   MFKRSVIAMACIFALSACGGGGGGSPDVKSADTLSKPAAPVVSE-----------KETEA
           ||||||||||||| ||||||||||||||||||| ||||||||:|           |: ||
g287       MFKRSVIAMACIFPLSACGGGGGGSPDVKSADTPSKPAAPVVAENAGEGVLPKEKKDEEA
                   10        20        30        40        50        60

           50       60        70        80        90       100       109
m287.pep   KEDAPQAGSQGQGAPSAQGSQDMAAVSEENTGNGGAVTADNPKNEDEVAQNDMPQNAAGT
              ||||  :|   | :::||||||||| ||||||||:|:|||||||  ||||||||||  
g287       AGGAPQADTQD--ATAGEGSQDMAAVSAENTGNGGAATTDNPKNEDAGAQNDMPQNAA--
                   70          80        90       100       110
```

```
              110       120       130       140       150       160      169
m287.pep    DSSTPNHTPDPNMLAGNMENQATDAGESSQPANQPDMANAADGMQGDDPSAGGQNAGNTA

g287        ------------------------------------------------------------

              170       180       190       200       210       220      229
m287.pep    AQGANQAGNNQAAGSSDPIPASNPAPANGGSNFGRVDLANGVLIDGPSQNITLTHCKGDS
             ::|||:|||| |||||  |||||||||||:|||::::|:|:||||||||||||||||
g287        -ESANQTGNNQPAGSSDSAPASNPAPANGGSDFGRTNVGNSVVIDGPSQNITLTHCKGDS
               120       130       140       150       160       170

              230       240       250       260       270       280      289
m287.pep    CSGNNFLDEEVQLKSEFEKLSDADKISNYKKDGKNDKFVGLVADSVQMKGINQYIIFYKP
            |:|:|:||||:  |||||||| :||: |||| : ::|||||| |:  | |:|||||
g287        CNGDNLLDEEAPSKSEFEKLSDEEKIKRYKKDEQRENFVGLVADRVKKDGTNKYIIFYTD
               180       190       200       210       220       230

              290       300       310       320       330       340      349
m287.pep    KPTSFARFRRSARSRRSLPAEMPLIPVNQADTLIVDGEAVSLTGHSGNIFAPEGNYRYLT
            || :     ||||||||||:|||||||||||||||||||||||||||||||||||||
g287        KPPT-----RSARSRRSLPAEIPLIPVNQADTLIVDGEAVSLTGHSGNIFAPEGNYRYLT
                    240       250       260       270       280       290

              350       360       370       380       390       400      409
m287.pep    YGAEKLPGGSYALRVQGEPAKGEMLAGAAVYNGEVLHFHTENGRPYPTRGRFAAKVDFGS
            ||||||||||||||||||||||||:|:||||||||||| |||||||: ||||||||||
g287        YGAEKLPGGSYALRVQGEPAKGEMLVGTAVYNGEVLHFHMENGRPYPSGGRFAAKVDFGS
                    300       310       320       330       340       350

              410       420       430       440       450       460      469
m287.pep    KSVDGIIDSGDDLHMGTQKFKAAIDGNGFKGTWTENGSGDVSGKFYGPAGEEVAGKYSYR
            |||||||||||||||||||||||||||||||||||:|||||:|||||||||||||||
g287        KSVDGIIDSGDDLHMGTQKFKAAIDGNGFKGTWTENGGGDVSGRFYGPAGEEVAGKYSYR
                    360       370       380       390       400       410

              470       480       489
m287.pep    PTDAEKGGFGVFAGKKEQDX
            ||||||||||||||||::||
g287        PTDAEKGGFGVFAGKKDRDX
                    420       430
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 72>:

```
a287.seq
      1  ATGTTTAAAC GCAGTGTGAT TGCAATGGCT TGTATTGTTG CCCTTTCAGC
     51  CTGTGGGGGC GGCGGTGGCG GATCGCCCGA TGTTAAGTCG GCGGACACGC
    101  TGTCAAAACC TGCCGCCCCT GTTGTTACTG AAGATGTCGG GGAAGAGGTG
    151  CTGCCGAAAG AAAAGAAAGA TGAGGAGGCG GTGAGTGGTG CGCCGCAAGC
    201  CGATACGCAG GACGCAACCG CCGGAAAAGG CGGTCAAGAT ATGGCGGCAG
    251  TTTCGGCAGA AAATACAGGC AATGGCGGTG CGGCAACAAC GGATAATCCC
    301  GAAAATAAAG ACGAGGGACC GCAAAATGAT ATGCCGCAAA ATGCCGCCGA
    351  TACAGATAGT TCGACACCGA ATCACACCCC TGCACCGAAT ATGCCAACCA
    401  GAGATATGGG AAACCAAGCA CCGGATGCCG GGGAATCGGC ACAACCGGCA
    451  AACCAACCGG ATATGGCAAA TGCGGCGGAC GGAATGCAGG GGGACGATCC
    501  GTCGGCAGGG GAAAATGCCG GCAATACGGC AGATCAAGCT GCAAATCAAG
    551  CTGAAAACAA TCAAGTCGGC GGCTCTCAAA ATCCTGCCTC TTCAACCAAT
    601  CCTAACGCCA CGAATGGCGG CAGCGATTTT GGAAGGATAA ATGTAGCTAA
    651  TGGCATCAAG CTTGACAGCG GTTCGGAAAA TGTAACGTTG ACACATTGTA
    701  AAGACAAAGT ATGCGATAGA GATTTCTTAG ATGAAGAAGC ACCACCAAAA
    751  TCAGAATTTG AAAAATTAAG TGATGAAGAA AAAATTAATA AATATAAAAA
    801  AGACGAGCAA CGAGAGAATT TTGTCGGTTT GGTTGCTGAC AGGGTAGAAA
```

```
 851  AGAATGGAAC TAACAAATAT GTCATCATTT ATAAAGACAA GTCCGCTTCA
 901  TCTTCATCTG CGCGATTCAG GCGTTCTGCA CGGTCGAGGC GGTCGCTTCC
 951  GGCCGAGATG CCGCTGATTC CCGTCAATCA GGCGGATACG CTGATTGTCG
1001  ATGGGGAAGC GGTCAGCCTG ACGGGGCATT CCGGCAATAT CTTCGCGCCC
1051  GAAGGGAATT ACCGGTATCT GACTTACGGG GCGGAAAAAT TGTCCGGCGG
1101  ATCGTATGCC CTCAGTGTGC AAGGCGAACC GGCAAAAGGC GAAATGCTTG
1151  CGGGCACGGC CGTGTACAAC GGCGAAGTGC TGCATTTCCA TATGGAAAAC
1201  GGCCGTCCGT CCCCGTCCGG AGGCAGGTTT GCCGCAAAAG TCGATTTCGG
1251  CAGCAAATCT GTGGACGGCA TTATCGACAG CGGCGATGAT TTGCATATGG
1301  GTACGCAAAA ATTCAAAGCC GTTATCGATG GAAACGGCTT TAAGGGGACT
1351  TGGACGGAAA ATGGCGGCGG GGATGTTTCC GGAAGGTTTT ACGGCCCGGC
1401  CGGCGAAGAA GTGGCGGGAA AATACAGCTA TCGCCCGACA GATGCGGAAA
1451  AGGGCGGATT CGGCGTGTTT GCCGGCAAAA AAGAGCAGGA TTGA
```

This corresponds to the amino acid sequence <SEQ ID 73; ORF 287.a>:

```
a287.pep
   1  MFKRSVIAMA CIVALSACGG GGGGSPDVKS ADTLSKPAAP VVTEDVGEEV
  51  LPKEKKDEEA VSGAPQADTQ DATAGKGGQD MAAVSAENTG NGGAATTDNP
 101  ENKDEGPQND MPQNAADTDS STPNHTPAPN MPTRDMGNQA PDAGESAQPA
 151  NQPDMANAAD GMQGDDPSAG ENAGNTADQA ANQAENNQVG GSQNPASSTN
 201  PNATNGGSDF GRINVANGIK LDSGSENVTL THCKDKVCDR DFLDEEAPPK
 251  SEFEKLSDEE KINKYKKDEQ RENFVGLVAD RVEKNGTNKY VIIYKDKSAS
 301  SSSARFRRSA RSRRSLPAEM PLIPVNQADT LIVDGEAVSL TGHSGNIFAP
 351  EGNYRYLTYG AEKLSGGSYA LSVQGEPAKG EMLAGTAVYN GEVLHFHMEN
 401  GRPSPSGGRF AAKVDFGSKS VDGIIDSGDD LHMGTQKFKA VIDGNGFKGT
 451  WTENGGGDVS GRFYGPAGEE VAGKYSYRPT DAEKGGFGVF AGKKEQD*
```

```
m287/a287            ORFs 287 and 287.a showed a 77.2% identity in 501 aa overlap

                             10        20        30        40                  49
m287.pep             MFKRSVIAMACIFALSACGGGGGGSPDVKSADTLSKPAAPVVSE-----------KETEA
                     |||||||||||| |||||||||||||||||||||||||||||:|           |: ||
a287                 MFKRSVIAMACIVALSACGGGGGGSPDVKSADTLSKPAAPVVTEDVGEEVLPKEKKDEEA
                             10        20        30        40        50        60

                    50        60        70        80        90       100      109
m287.pep             KEDAPQAGSQGQGAPSAQGSQDMAAVSEENTGNGGAVTADNPKNEDEVAQNDMPQNAAGT
                        |||| :|   | :::|:||||||| ||||||||:|:|||:|:||  ||||||||| |
a287                 VSGAPQADTQ--DATAGKGGQDMAAVSAENTGNGGAATTDNPENKDEGPQNDMPQNAADT
                             70          80        90       100       110

                   110       120       130       140       150       160      169
m287.pep             DSSTPNHTPDPNMLAGNMENQATDAGESSQPANQPDMANAADGMQGDDPSAGGQNAGNTA
                     ||||||||| ||| : :| ||| |||||:|||||||||||||||||||||||| :|||||
a287                 DSSTPNHTPAPNMPTRDMGNQAPDAGESAQPANQPDMANAADGMQGDDPSAG-ENAGNTA
                    120       130       140       150       160       170

                   170       180       190       200       210       220      229
m287.pep             AQGANQAGNNQAAGSSDPIPASNPAPANGGSNFGRVDLANGVLIDGPSQNITLTHCKGDS
                      |:|||| |||::||::|  ::||  :||||:|||:::|||: :|: |:|:||||||
a287                 DQAANQAENNQVGGSQNPASSTNPNATNGGSDFGRINVANGIKLDSGSENVTLTHCKDKV
                     180       190       200       210       220       230

                   230       240       250       260       270       280      289
m287.pep             CSGNNFLDEEVQLKSEFEKLSDADKISNYKKDGKNDKFVGLVADSVQMKGINQYIIFYKP
                     |:  :|||||:  ||||||||| :||::|||| : ::||||||| |: :| |:|:|:||
a287                 CD-RDFLDEEAPPKSEFEKLSDEEKINKYKKDEQRENFVGLVADRVEKNGTNKYVIIYKD
                      240       250       260       270       280       290

                   290       300       310       320       330       340
m287.pep             KP--TSFARFRRSARSRRSLPAEMPLIPVNQADTLIVDGEAVSLTGHSGNIFAPEGNYRY
                     |   :| |||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
a287           KSASSSSARFRRSARSRRSLPAEMPLIPVNQADTLIVDGEAVSLTGHSGNIFAPEGNYRY
                 300       310       320       330       340       350

               350       360       370       380       390       400
m287.pep       LTYGAEKLPGGSYALRVQGEPAKGEMLAGAAVYNGEVLHFHTENGRPYPTRGRFAAKVDF
               |||||||| |||||| |||||||||||||:||||||||||| ||||| |: |||||||||
a287           LTYGAEKLSGGSYALSVQGEPAKGEMLAGTAVYNGEVLHFHMENGRPSPSGGRFAAKVDF
                 360       370       380       390       400       410

               410       420       430       440       450       460
m287.pep       GSKSVDGIIDSGDDLHMGTQKFKAAIDGNGFKGTWTENGSGDVSGKFYGPAGEEVAGKYS
               ||||||||||||||||||||||||:||||||||||||||:|||||:||||||||||||||
a287           GSKSVDGIIDSGDDLHMGTQKFKAVIDGNGFKGTWTENGGGDVSGRFYGPAGEEVAGKYS
                 420       430       440       450       460       470

               470       480      489
m287.pep       YRPTDAEKGGFGVFAGKKEQDX
               ||||||||||||||||||||||
a287           YRPTDAEKGGFGVFAGKKEQDX
                 480       490
```

406

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 74>:

m406.seq

```
  1  ATGCAAGCAC GGCTGCTGAT ACCTATTCTT TTTTCAGTTT TTATTTTATC
 51  CGCCTGCGGG ACACTGACAG GTATTCCATC GCATGGCGGA GGTAAACGCT
101  TTGCGGTCGA ACAAGAACTT GTGGCCGCTT CTGCCAGAGC TGCCGTTAAA
151  GACATGGATT TACAGGCATT ACACGGACGA AAAGTTGCAT TGTACATTGC
201  CACTATGGGC GACCAAGGTT CAGGCAGTTT GACAGGGGGT CGCTACTCCA
251  TTGATGCACT GATTCGTGGC GAATACATAA ACAGCCCTGC CGTCCGTACC
301  GATTACACCT ATCCACGTTA CGAAACCACC GCTGAAACAA CATCAGGCGG
351  TTTGACAGGT TTAACCACTT CTTTATCTAC ACTTAATGCC CCTGCACTCT
401  CTCGCACCCA ATCAGACGGT AGCGGAAGTA AAAGCAGTCT GGGCTTAAAT
451  ATTGGCGGGA TGGGGGATTA TCGAAATGAA ACCTTGACGA CTAACCCGCG
501  CGACACTGCC TTTCTTTCCC ACTTGGTACA GACCGTATTT TTCCTGCGCG
551  GCATAGACGT TGTTTCTCCT GCCAATGCCG ATACAGATGT GTTTATTAAC
601  ATCGACGTAT TCGGAACGAT ACGCAACAGA ACCGAAATGC ACCTATACAA
651  TGCCGAAACA CTGAAAGCCC AAACAAAACT GGAATATTTC GCAGTAGACA
701  GAACCAATAA AAAATTGCTC ATCAAACCAA AAACCAATGC GTTTGAAGCT
751  GCCTATAAAG AAAATTACGC ATTGTGGATG GGGCCGTATA AAGTAAGCAA
801  AGGAATTAAA CCGACGGAAG GATTAATGGT CGATTTCTCC GATATCCGAC
851  CATACGGCAA TCATACGGGT AACTCCGCCC CATCCGTAGA GGCTGATAAC
901  AGTCATGAGG GGTATGGATA CAGCGATGAA GTAGTGCGAC AACATAGACA
951  AGGACAACCT TGA
```

This corresponds to the amino acid sequence <SEQ ID 75; ORF 406>:

m406.pep

```
  1  MQARLLIPIL FSVFILSACG TLTGIPSHGG GKRFAVEQEL VAASARAAVK
 51  DMDLQALHGR KVALYIATMG DQGSGSLTGG RYSIDALIRG EYINSPAVRT
101  DYTYPRYETT AETTSGGLTG LTTSLSTLNA PALSRTQSDG SGSKSSLGLN
151  IGGMGDYRNE TLTTNPRDTA FLSHLVQTVF FLRGIDVVSP ANADTDVFIN
201  IDVFGTIRNR TEMHLYNAET LKAQTKLEYF AVDRTNKKLL IKPKTNAFEA
251  AYKENYALWM GPYKVSKGIK PTEGLMVDFS DIRPYGNHTG NSAPSVEADN
301  SHEGYGYSDE VVRQHRQGQP *
```

The following partial DNA sequence was identified in *N. gonorrhoeae* <SEQ ID 76>:

g406.seq

```
  1  ATGCGGGCAC GGCTGCTGAT ACCTATTCTT TTTTCAGTTT TTATTTTATC
 51  CGCCTGCGGG ACACTGACAG GTATTCCATC GCATGGCGGA GGCAAACGCT
101  TCGCGGTCGA ACAAGAACTT GTGGCCGCTT CTGCCAGAGC TGCCGTTAAA
151  GACATGGATT TACAGGCATT ACACGGACGA AAAGTTGCAT TGTACATTGC
201  AACTATGGGC GACCAAGGTT CAGGCAGTTT GACAGGGGGT CGCTACTCCA
251  TTGATGCACT GATTCGCGGC GAATACATAA ACAGCCCTGC CGTCCGCACC
301  GATTACACCT ATCCGCGTTA CGAAACCACC GCTGAAACAA CATCAGGCGG
351  TTTGACGGGT TTAACCACTT CTTTATCTAC ACTTAATGCC CCTGCACTCT
401  CGCGCACCCA ATCAGACGGT AGCGGAAGTA GGAGCAGTCT GGGCTTAAAT
451  ATTGGCGGGA TGGGGGATTA TCGAAATGAA ACCTTGACGA CCAACCCGCG
501  CGACACTGCC TTTCTTTCCC ACTTGGTGCA GACCGTATTT TTCCTGCGCG
551  GCATAGACGT TGTTTCTCCT GCCAATGCCG ATACAGATGT GTTTATTAAC
601  ATCGACGTAT TCGGAACGAT ACGCAACAGA ACCGAAATGC ACCTATACAA
651  TGCCGAAACA CTGAAAGCCC AAACAAAACT GGAATATTTC GCAGTAGACA
701  GAACCAATAA AAAATTGCTC ATCAAACCCA AAACCAATGC GTTTGAAGCT
751  GCCTATAAAG AAAATTACGC ATTGTGGATG GGGCCGTATA AAGTAAGCAA
801  AGGAATCAAA CCGACGGAAG GATTGATGGT CGATTTCTCC GATATCCAAC
851  CATACGGCAA TCATACGGGT AACTCCGCCC CATCCGTAGA GGCTGATAAC
901  AGTCATGAGG GGTATGGATA CAGCGATGAA GCAGTGCGAC AACATAGACA
951  AGGGCAACCT TGA
```

This corresponds to the amino acid sequence <SEQ ID 77; ORF 406.ng>:

g406.pep

```
  1  MRARLLIPIL FSVFILSACG TLTGIPSHGG GKRFAVEQEL VAASARAAVK
 51  DMDLQALHGR KVALYIATMG DQGSGSLTGG RYSIDALIRG EYINSPAVRT
101  DYTYPRYETT AETTSGGLTG LTTSLSTLNA PALSRTQSDG SGSRSSLGLN
151  IGGMGDYRNE TLTTNPRDTA FLSHLVQTVF FLRGIDVVSP ANADTDVFIN
201  IDVFGTIRNR TEMHLYNAET LKAQTKLEYF AVDRTNKKLL IKPKTNAFEA
251  AYKENYALWM GPYKVSKGIK PTEGLMVDFS DIQPYGNHTG NSAPSVEADN
301  SHEGYGYSDE AVRQHRQGQP *
```

ORF 406.ng shows 98.8% identity over a 320 aa overlap with a predicted ORF (ORF406.a) from *N. gonorrhoeae:*

g406/m406

```
                    10        20        30        40        50        60
g406.pep    MRARLLIPILFSVFILSACGTLTGIPSHGGGKRFAVEQELVAASARAAVKDMDLQALHGR
            |:||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m406        MQARLLIPILFSVFILSACGTLTGIPSHGGGKRFAVEQELVAASARAAVKDMDLQALHGR
                    10        20        30        40        50        60

                    70        80        90       100       110       120
g406.pep    KVALYIATMGDQGSGSLTGGRYSIDALIRGEYINSPAVRTDYTYPRYETTAETTSGGLTG
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m406        KVALYIATMGDQGSGSLTGGRYSIDALIRGEYINSPAVRTDYTYPRYETTAETTSGGLTG
                    70        80        90       100       110       120

                   130       140       150       160       170       180
g406.pep    LTTSLSTLNAPALSRTQSDGSGSRSSLGLNIGGMGDYRNETLTTNPRDTAFLSHLVQTVF
            ||||||||||||||||||||||:|||||||||||||||||||||||||||||||||||||
m406        LTTSLSTLNAPALSRTQSDGSGSKSSLGLNIGGMGDYRNETLTTNPRDTAFLSHLVQTVF
                   130       140       150       160       170       180

                   190       200       210       220       230       240
```

```
g406.pep     FLRGIDVVSPANADTDVFINIDVFGTIRNRTEMHLYNAETLKAQTKLEYFAVDRTNKKLL
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
m406         FLRGIDVVSPANADTDVFINIDVFGTIRNRTEMHLYNAETLKAQTKLEYFAVDRTNKKLL
                     190       200       210       220       230       240

                     250       260       270       280       290       300
g406.pep     IKPKTNAFEAAYKENYALWMGPYKVSKGIKPTEGLMVDFSDIQPYGNHTGNSAPSVEADN
             |||||||||||||||||||||||||||||||||||||||||:||||||||||||||||||
m406         IKPKTNAFEAAYKENYALWMGPYKVSKGIKPTEGLMVDFSDIRPYGNHTGNSAPSVEADN
                     250       260       270       280       290       300

                     310       320
g406.pep     SHEGYGYSDEAVRQHRQGQPX
             ||||||||||:||||||||||
m406         SHEGYGYSDEVVRQHRQGQPX
                     310       320
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 78>:

```
a406.seq
     1  ATGCAAGCAC GGCTGCTGAT ACCTATTCTT TTTTCAGTTT TTATTTTATC
    51  CGCCTGCGGG ACACTGACAG GTATTCCATC GCATGGCGGA GGTAAACGCT
   101  TCGCGGTCGA ACAAGAACTT GTGGCCGCTT CTGCCAGAGC TGCCGTTAAA
   151  GACATGGATT TACAGGCATT ACACGGACGA AAAGTTGCAT TGTACATTGC
   201  AACTATGGGC GACCAAGGTT CAGGCAGTTT GACAGGGGGT CGCTACTCCA
   251  TTGATGCACT GATTCGTGGC GAATACATAA ACAGCCCTGC CGTCCGTACC
   301  GATTACACCT ATCCACGTTA CGAAACCACC GCTGAAACAA CATCAGGCGG
   351  TTTGACAGGT TTAACCACTT CTTTATCTAC ACTTAATGCC CCTGCACTCT
   401  CGCGCACCCA ATCAGACGGT AGCGGAAGTA AAAGCAGTCT GGGCTTAAAT
   451  ATTGGCGGGA TGGGGGATTA TCGAAATGAA ACCTTGACGA CTAACCCGCG
   501  CGACACTGCC TTTCTTTCCC ACTTGGTACA GACCGTATTT TTCCTGCGCG
   551  GCATAGACGT TGTTTCTCCT GCCAATGCCG ATACGGATGT GTTTATTAAC
   601  ATCGACGTAT TCGGAACGAT ACGCAACAGA ACCGAAATGC ACCTATACAA
   651  TGCCGAAACA CTGAAAGCCC AAACAAAACT GGAATATTTC GCAGTAGACA
   701  GAACCAATAA AAAATTGCTC ATCAAACCAA AAACCAATGC GTTTGAAGCT
   751  GCCTATAAAG AAAATTACGC ATTGTGGATG GGACCGTATA AAGTAAGCAA
   801  AGGAATTAAA CCGACAGAAG GATTAATGGT CGATTTCTCC GATATCCAAC
   851  CATACGGCAA TCATATGGGT AACTCTGCCC CATCCGTAGA GGCTGATAAC
   901  AGTCATGAGG GGTATGGATA CAGCGATGAA GCAGTGCGAC GACATAGACA
   951  AGGGCAACCT TGA
```

This corresponds to the amino acid sequence <SEQ ID 79; ORF 406.a>:

```
a406.pep
     1  MQARLLIPIL FSVFILSACG TLTGIPSHGG GKRFAVEQEL VAASARAAVK
    51  DMDLQALHGR KVALYIATMG DQGSGSLTGG RYSIDALIRG EYINSPAVRT
   101  DYTYPRYETT AETTSGGLTG LTTSLSTLNA PALSRTQSDG SGSKSSLGLN
   151  IGGMGDYRNE TLTTNPRDTA FLSHLVQTVF FLRGIDVVSP ANADTDVFIN
   201  IDVFGTIRNR TEMHLYNAET LKAQTKLEYF AVDRTNKKLL IKPKTNAFEA
   251  AYKENYALWM GPYKVSKGIK PTEGLMVDFS DIQPYGNHMG NSAPSVEADN
   301  SHEGYGYSDE AVRRHRQGQP *
```

```
m406/a406    ORFs 406 and 406.a showed a 98.8% identity in 320 aa overlap

                     10        20        30        40        50        60
m406.pep     MQARLLIPILFSVFILSACGTLTGIPSHGGGKRFAVEQELVAASARAAVKDMDLQALHGR
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a406         MQARLLIPILFSVFILSACGTLTGIPSHGGGKRFAVEQELVAASARAAVKDMDLQALHGR
                     10        20        30        40        50        60

                     70        80        90       100       110       120
m406.pep     KVALYIATMGDQGSGSLTGGRYSIDALIRGEYINSPAVRTDYTYPRYETTAETTSGGLTG
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
a406        KVALYIATMGDQGSGSLTGGRYSIDALIRGEYINSPAVRTDYTYPRYETTAETTSGGLTG
                     70        80        90       100       110       120

                    130       140       150       160       170       180
m406.pep    LTTSLSTLNAPALSRTQSDGSGSKSSLGLNIGGMGDYRNETLTTNPRDTAFLSHLVQTVF
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a406        LTTSLSTLNAPALSRTQSDGSGSKSSLGLNIGGMGDYRNETLTTNPRDTAFLSHLVQTVF
                    130       140       150       160       170       180

                    190       200       210       220       230       240
m406.pep    FLRGIDVVSPANADTDVFINIDVFGTIRNRTEMHLYNAETLKAQTKLEYFAVDRTNKKLL
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
a406        FLRGIDVVSPANADTDVFINIDVFGTIRNRTEMHLYNAETLKAQTKLEYFAVDRTNKKLL
                    190       200       210       220       230       240

                    250       260       270       280       290       300
m406.pep    IKPKTNAFEAAYKENYALWMGPYKVSKGIKPTEGLMVDFSDIRPYGNHTGNSAPSVEADN
            ||||||||||||||||||||||||||||||||||||||||||:||||| |||||||||||
a406        IKPKTNAFEAAYKENYALWMGPYKVSKGIKPTEGLMVDFSDIQPYGNHMGNSAPSVEADN
                    250       260       270       280       290       300

                    310       320
m406.pep    SHEGYGYSDEVVRQHRQGQPX
            ||||||||||:||:|||||||
a406        SHEGYGYSDEAVRRHRQGQPX
                    310       320
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 80>:

```
m726.seq
      1  ATGACCATCT ATTTCAAAAA CGGCTTTTAC GACGACACAT TGGGCGGCAT
     51  CCCCGAAGGC GCGGTTGCCG TCCGCGCCGA AGAATACGCC GCCCTTTTGG
    101  CAGGACAGGC GCAGGGCGGG CAGATTGCCG CAGATTCCGA CGGCCGCCCC
    151  GTTTTAACCC CGCCGCGCCC GTCCGATTAC CACGAATGGG ACGGCAAAAA
    201  ATGGAAAATC AGCAAAGCCG CCGCCGCCGC CCGTTTCGCC AAACAAAAAA
    251  CCGCCTTGGC ATTCCGCCTC GCGGAAAAGG CGGACGAACT CAAAAACAGC
    301  CTCTTGGCGG GCTATCCCCA AGTGGAAATC GACAGCTTTT ACAGGCAGGA
    351  AAAAGAAGCC CTCGCGCGGC AGGCGGACAA CAACGCCCCG ACCCCGATGC
    401  TGGCGCAAAT CGCCGCCGCA AGGGGCGTGG AATTGGACGT TTTGATTGAA
    451  AAAGTTATCG AAAAATCCGC CCGCCTGGCT GTTGCCGCCG GCGCGATTAT
    501  CGGAAAGCGT CAGCAGCTCG AAGACAAATT GAACACCATC GAAACCGCGC
    551  CCGGATTGGA CGCGCTGGAA AAGGAAATCG AAGAATGGAC GCTAAACATC
    601  GGCTGA
```

This corresponds to the amino acid sequence <SEQ ID 81; ORF 726>:

```
m726.pep
      1  MTIYFKNGFY DDTLGGIPEG AVAVRAEEYA ALLAGQAQGG QIAADSDGRP
     51  VLTPPRPSDY HEWDGKKWKI SKAAAAARFA KQKTALAFRL AEKADELKNS
    101  LLAGYPQVEI DSFYRQEKEA LARQADNNAP TPMLAQIAAA RGVELDVLIE
    151  KVIEKSARLA VAAGAIIGKR QQLEDKLNTI ETAPGLDALE KEIEEWTLNI
    201  G*
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 82>:

```
m907-2.seq
      1  ATGAGAAAAC CGACCGATAC CCTACCCGTT AATCTGCAAC GCCGCCGCCT
     51  GTTGTGTGCC GCCGGTGCGT TGTTGCTCAG TCCTCTGGCG CACGCCGGCG
    101  CGCAACGTGA GGAAACGCTT GCCGACGATG TGGCTTCCGT GATGAGGAGT
```

```
151  TCTGTCGGCA GCGTCAATCC GCCGAGGCTG GTGTTTGACA ATCCGAAAGA
201  GGGCGAGCGT TGGTTGTCTG CCATGTCGGC ACGTTTGGCA AGGTTCGTCC
251  CCGAGGAGGA GGAGCGGCGC AGGCTGCTGG TCAATATCCA GTACGAAAGC
301  AGCCGGGCCG GTTTGGATAC GCAGATTGTG TTGGGGCTGA TTGAGGTGGA
351  AAGCGCGTTC CGCCAGTATG CAATCAGCGG TGTCGGCGCG CGCGGCCTGA
401  TGCAGGTTAT GCCGTTTTGG AAAAACTACA TCGGCAAACC GGCGCACAAC
451  CTGTTCGACA TCCGCACCAA CCTGCGTTAC GGCTGTACCA TCCTGCGCCA
501  TTACCGGAAT CTTGAAAAAG GCAACATCGT CCGCGCGCTT GCCCGCTTTA
551  ACGGCAGCTT GGGCAGCAAT AAATATCCGA ACGCCGTTTT GGGCGCGTGG
601  CGCAACCGCT GGCAGTGGCG TTGA
```

This corresponds to the amino acid sequence <SEQ ID 83; ORF 907-2>:

```
m907-2.pep
  1  MRKPTDTLPV NLQRRRLLCA AGALLLSPLA HAGAQREETL ADDVASVMRS
 51  SVGSVNPPRL VFDNPKEGER WLSAMSARLA RFVPEEEERR RLLVNIQYES
101  SRAGLDTQIV LGLIEVESAF RQYAISGVGA RGLMQVMPFW KNYIGKPAHN
151  LFDIRTNLRY GCTILRHYRN LEKGNIVRAL ARFNGSLGSN KYPNAVLGAW
201  RNRWQWR*
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 84>:

```
m953.seq
  1  ATGAAAAAAA TCATCTTCGC CGCACTCGCA GCCGCCGCCA TCAGTACTGC
 51  CTCCGCCGCC ACCTACAAAG TGGACGAATA TCACGCCAAC GCCCGTTTCG
101  CCATCGACCA TTTCAACACC AGCACCAACG TCGGCGGTTT TTACGGTCTG
151  ACCGGTTCCG TCGAGTTCGA CCAAGCAAAA CGCGACGGTA AAATCGACAT
201  CACCATCCCC ATTGCCAACC TGCAAAGCGG TTCGCAACAC TTTACCGACC
251  ACCTGAAATC AGCCGACATC TTCGATGCCG CCCAATATCC GGACATCCGC
301  TTTGTTTCCA CCAAATTCAA CTTCAACGGC AAAAAACTGG TTTCCGTTGA
351  CGGCAACCTG ACCATGCACG GCAAAACCGC CCCCGTCAAA CTCAAAGCCG
401  AAAAATTCAA CTGCTACCAA AGCCCGATGG AGAAAACCGA AGTTTGTGGC
451  GGCGACTTCA GCACCACCAT CGACCGCACC AAATGGGGCA TGGACTACCT
501  CGTTAACGTT GGTATGACCA AAAGCGTCCG CATCGACATC CAAATCGAGG
551  CAGCCAAACA ATAA
```

This corresponds to the amino acid sequence <SEQ ID 85; ORF 953>:

```
m953.pep
  1  MKKIIFAALA AAAISTASAA TYKVDEYHAN ARFAIDHFNT STNVGGFYGL
 51  TGSVEFDQAK RDGKIDITIP IANLQSGSQH FTDHLKSADI FDAAQYPDIR
101  FVSTKFNFNG KKLVSVDGNL TMHGKTAPVK LKAEKFNCYQ SPMEKTEVCG
151  GDFSTTIDRT KWGMDYLVNV GMTKSVRIDI QIEAAKQ*
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 86>:

```
orf1-1.seq
  1  ATGAAAACAA CCGACAAACG GACAACCGAA ACACACCGCA AAGCCCCGAA
 51  AACCGGCCGC ATCCGCTTCT CGCCTGCTTA CTTAGCCATA TGCCTGTCGT
101  TCGGCATTCT TCCCCAAGCC TGGGCGGGAC ACACTTATTT CGGCATCAAC
151  TACCAATACT ATCGCGACTT TGCCGAAAAT AAAGGCAAGT TTGCAGTCGG
201  GGCGAAAGAT ATTGAGGTTT ACAACAAAAA AGGGGAGTTG GTCGGCAAAT
251  CAATGACAAA AGCCCCGATG ATTGATTTTT CTGTGGTGTC GCGTAACGGC
301  GTGGCGGCAT TGGTGGGCGA TCAATATATT GTGAGCGTGG CACATAACGG
351  CGGCTATAAC AACGTTGATT TTGGTGCGGA AGGAAGAAAT CCCGATCAAC
401  ATCGTTTTAC TTATAAAATT GTGAAACGGA ATAATTATAA AGCAGGGACT
451  AAAGGCCATC CTTATGGCGG CGATTATCAT ATGCCGCGTT TGCATAAATT
501  TGTCACAGAT GCAGAACCTG TTGAAATGAC CAGTTATATG GATGGGCGGA
```

```
 551  AATATATCGA TCAAAATAAT TACCCTGACC GTGTTCGTAT TGGGGCAGGC
 601  AGGCAATATT GGCGATCTGA TGAAGATGAG CCCAATAACC GCGAAAGTTC
 651  ATATCATATT GCAAGTGCGT ATTCTTGGCT CGTTGGTGGC AATACCTTTG
 701  CACAAAATGG ATCAGGTGGT GGCACAGTCA ACTTAGGTAG TGAAAAAATT
 751  AAACATAGCC CATATGGTTT TTTACCAACA GGAGGCTCAT TTGGCGACAG
 801  TGGCTCACCA ATGTTTATCT ATGATGCCCA AAAGCAAAAG TGGTTAATTA
 851  ATGGGGTATT GCAAACGGGC AACCCCTATA TAGGAAAAAG CAATGGCTTC
 901  CAGCTGGTTC GTAAAGATTG GTTCTATGAT GAAATCTTTG CTGGAGATAC
 951  CCATTCAGTA TTCTACGAAC CACGTCAAAA TGGGAAATAC TCTTTTAACG
1001  ACGATAATAA TGGCACAGGA AAAATCAATG CCAAACATGA ACACAATTCT
1051  CTGCCTAATA GATTAAAAAC ACGAACCGTT CAATTGTTTA ATGTTTCTTT
1101  ATCCGAGACA GCAAGAGAAC CTGTTTATCA TGCTGCAGGT GGTGTCAACA
1151  GTTATCGACC CAGACTGAAT AATGGAGAAA ATATTTCCTT TATTGACGAA
1201  GGAAAAGGCG AATTGATACT TACCAGCAAC ATCAATCAAG GTGCTGGAGG
1251  ATTATATTTC CAAGGAGATT TTACGGTCTC GCCTGAAAAT AACGAAACTT
1301  GGCAAGGCGC GGGCGTTCAT ATCAGTGAAG ACAGTACCGT TACTTGGAAA
1351  GTAAACGGCG TGGCAAACGA CCGCCTGTCC AAAATCGGCA AAGGCACGCT
1401  GCACGTTCAA GCCAAAGGGG AAAACCAAGG CTCGATCAGC GTGGGCGACG
1451  GTACAGTCAT TTTGGATCAG CAGGCAGACG ATAAAGGCAA AAAACAAGCC
1501  TTTAGTGAAA TCGGCTTGGT CAGCGGCAGG GGTACGGTGC AACTGAATGC
1551  CGATAATCAG TTCAACCCCG ACAAACTCTA TTTCGGCTTT CGCGGCGGAC
1601  GTTTGGATTT AAACGGGCAT TCGCTTTCGT TCCACCGTAT TCAAAATACC
1651  GATGAAGGGG CGATGATTGT CAACCACAAT CAAGACAAAG AATCCACCGT
1701  TACCATTACA GGCAATAAAG ATATTGCTAC AACCGGCAAT AACAACAGCT
1751  TGGATAGCAA AAAAGAAATT GCCTACAACG GTTGGTTTGG CGAGAAAGAT
1801  ACGACCAAAA CGAACGGGCG GCTCAACCTT GTTTACCAGC CCGCCGCAGA
1851  AGACCGCACC CTGCTGCTTT CCGGCGGAAC AAATTTAAAC GGCAACATCA
1901  CGCAAACAAA CGGCAAACTG TTTTTCAGCG GCAGACCAAC ACCGCACGCC
1951  TACAATCATT TAAACGACCA TTGGTCGCAA AAAGAGGGCA TTCCTCGCGG
2001  GGAAATCGTG TGGGACAACG ACTGGATCAA CCGCACATTT AAAGCGGAAA
2051  ACTTCCAAAT TAAAGGCGGA CAGGCGGTGG TTTCCCGCAA TGTTGCCAAA
2101  GTGAAAGGCG ATTGGCATTT GAGCAATCAC GCCCAAGCAG TTTTTGGTGT
2151  CGCACCGCAT CAAAGCCACA CAATCTGTAC ACGTTCGGAC TGGACGGGTC
2201  TGACAAATTG TGTCGAAAAA ACCATTACCG ACGATAAAGT GATTGCTTCA
2251  TTGACTAAGA CCGACATCAG CGGCAATGTC GATCTTGCCG ATCACGCTCA
2301  TTTAAATCTC ACAGGGCTTG CCACACTCAA CGGCAATCTT AGTGCAAATG
2351  GCGATACACG TTATACAGTC AGCCACAACG CCACCCAAAA CGGCAACCTT
2401  AGCCTCGTGG GCAATGCCCA AGCAACATTT AATCAAGCCA CATTAAACGG
2451  CAACACATCG GCTTCGGGCA ATGCTTCATT TAATCTAAGC GACCACGCCG
2501  TACAAAACGG CAGTCTGACG CTTTCCGGCA ACGCTAAGGC AAACGTAAGC
2551  CATTCCGCAC TCAACGGTAA TGTCTCCCTA GCCGATAAGG CAGTATTCCA
2601  TTTTGAAAGC AGCCGCTTTA CCGGACAAAT CAGCGGCGGC AAGGATACGG
2651  CATTACACTT AAAAGACAGC GAATGGACGC TGCCGTCAGG CACGGAATTA
2701  GGCAATTTAA ACCTTGACAA CGCCACCATT ACACTCAATT CCGCCTATCG
2751  CCACGATGCG GCAGGGGCGC AAACCGGCAG TGCGACAGAT GCGCCGCGCC
2801  GCCGTTCGCG CCGTTCGCGC CGTTCCCTAT TATCCGTTAC ACCGCCAACT
2851  TCGGTAGAAT CCCGTTTCAA CACGCTGACG GTAAACGGCA AATTGAACGG
2901  TCAGGGAACA TTCCGCTTTA TGTCGGAACT CTTCGGCTAC CGCAGCGACA
2951  AATTGAAGCT GGCGGAAAGT TCCGAAGGCA CTTACACCTT GGCGGTCAAC
3001  AATACCGGCA ACGAACCTGC AAGCCTCGAA CAATTGACGG TAGTGGAAGG
3051  AAAAGACAAC AAACCGCTGT CCGAAAACCT TAATTTCACC CTGCAAAACG
3101  AACACGTCGA TGCCGGCGCG TGGCGTTACC AACTCATCCG CAAAGACGGC
3151  GAGTTCCGCC TGCATAATCC GGTCAAAGAA CAAGAGCTTT CCGACAAACT
3201  CGGCAAGGCA GAAGCCAAAA AACAGGCGGA AAAAGACAAC GCGCAAAGCC
3251  TTGACGCGCT GATTGCGGCC GGGCGCGATG CCGTCGAAAA GACAGAAAGC
3301  GTTGCCGAAC CGGCCCGGCA GGCAGGCGGG GAAAATGTCG GCATTATGCA
3351  GGCGGAGGAA GAGAAAAAAC GGGTGCAGGC GGATAAAGAC ACCGCCTTGG
3401  CGAAACAGCG CGAAGCGGAA ACCCGGCCGG CTACCACCGC CTTCCCCCGC
3451  GCCCGCCGCG CCCGCCGGGA TTTGCCGCAA CTGCAACCCC AACCGCAGCC
3501  CCAACCGCAG CGCGACCTGA TCAGCCGTTA TGCCAATAGC GGTTTGAGTG
3551  AATTTTCCGC CACGCTCAAC AGCGTTTTCG CCGTACAGGA CGAATTAGAC
3601  CGCGTATTTG CCGAAGACCG CCGCAACGCC GTTTGGACAA GCGGCATCCG
3651  GGACACCAAA CACTACCGTT CGCAAGATTT CCGCGCCTAC CGCCAACAAA
```

```
3701  CCGACCTGCG CCAAATCGGT ATGCAGAAAA ACCTCGGCAG CGGGCGCGTC
3751  GGCATCCTGT TTTCGCACAA CCGGACCGAA AACACCTTCG ACGACGGCAT
3801  CGGCAACTCG GCACGGCTTG CCCACGGCGC CGTTTTCGGG CAATACGGCA
3851  TCGACAGGTT CTACATCGGC ATCAGCGCGG GCGCGGGTTT TAGCAGCGGC
3901  AGCCTTTCAG ACGGCATCGG AGGCAAAATC CGCCGCCGCG TGCTGCATTA
3951  CGGCATTCAG GCACGATACC GCGCCGGTTT CGGCGGATTC GGCATCGAAC
4001  CGCACATCGG CGCAACGCGC TATTTCGTCC AAAAAGCGGA TTACCGCTAC
4051  GAAAACGTCA ATATCGCCAC CCCCGGCCTT GCATTCAACC GCTACCGCGC
4101  GGGCATTAAG GCAGATTATT CATTCAAACC GGCGCAACAC ATTTCCATCA
4151  CGCCTTATTT GAGCCTGTCC TATACCGATG CCGCTTCGGG CAAAGTCCGA
4201  ACACGCGTCA ATACCGCCGT ATTGGCTCAG GATTTCGGCA AAACCCGCAG
4251  TGCGGAATGG GGCGTAAACG CCGAAATCAA AGGTTTCACG CTGTCCCTCC
4301  ACGCTGCCGC CGCCAAAGGC CCGCAACTGG AAGCGCAACA CAGCGCGGGC
4351  ATCAAATTAG GCTACCGCTG GTAA
```

This corresponds to the amino acid sequence <SEQ ID 87; ORF orf1-1>:

orf1-1.pep

```
   1  MKTTDKRTTE THRKAPKTGR IRFSPAYLAI CLSFGILPQA WAGHTYFGIN
  51  YQYYRDFAEN KGKFAVGAKD IEVYNKKGEL VGKSMTKAPM IDFSVVSRNG
 101  VAALVGDQYI VSVAHNGGYN NVDFGAEGRN PDQHRFTYKI VKRNNYKAGT
 151  KGHPYGGDYH MPRLHKFVTD AEPVEMTSYM DGRKYIDQNN YPDRVRIGAG
 201  RQYWRSDEDE PNNRESSYHI ASAYSWLVGG NTFAQNGSGG GTVNLGSEKI
 251  KHSPYGFLPT GGSFGDSGSP MFIYDAQKQK WLINGVLQTG NPYIGKSNGF
 301  QLVRKDWFYD EIFAGDTHSV FYEPRQNGKY SFNDDNNGTG KINAKHEHNS
 351  LPNRLKTRTV QLFNVSLSET AREPVYHAAG GVNSYRPRLN NGENISFIDE
 401  GKGELILTSN INQGAGGLYF QGDFTVSPEN NETWQGAGVH ISEDSTVTWK
 451  VNGVANDRLS KIGKGTLHVQ AKGENQGSIS VGDGTVILDQ QADDKGKKQA
 501  FSEIGLVSGR GTVQLNADNQ FNPDKLYFGF RGGRLDLNGH SLSFHRIQNT
 551  DEGAMIVNHN QDKESTVTIT GNKDIATTGN NNSLDSKKEI AYNGWFGEKD
 601  TTKTNGRLNL VYQPAAEDRT LLLSGGTNLN GNITQTNGKL FFSGRPTPHA
 651  YNHLNDHWSQ KEGIPRGEIV WDNDWINRTF KAENFQIKGG QAVVSRNVAK
 701  VKGDWHLSNH AQAVFGVAPH QSHTICTRSD WTGLTNCVEK TITDDKVIAS
 751  LTKTDISGNV DLADHAHLNL TGLATLNGNL SANGDTRYTV SHNATQNGNL
 801  SLVGNAQATF NQATLNGNTS ASGNASFNLS DHAVQNGSLT LSGNAKANVS
 851  HSALNGNVSL ADKAVFHFES SRFTGQISGG KDTALHLKDS EWTLPSGTEL
 901  GNLNLDNATI TLNSAYRHDA AGAQTGSATD APRRRSRRSR RSLLSVTPPT
 951  SVESRFNTLT VNGKLNGQGT FRFMSELFGY RSDKLKLAES SEGTYTLAVN
1001  NTGNEPASLE QLTVVEGKDN KPLSENLNFT LQNEHVDAGA WRYQLIRKDG
1051  EFRLHNPVKE QELSDKLGKA EAKKQAEKDN AQSLDALIAA GRDAVEKTES
1101  VAEPARQAGG ENVGIMQAEE EKKRVQADKD TALAKQREAE TRPATTAFPR
1151  ARRARRDLPQ LQPQPQPQPQ RDLISRYANS GLSEFSATLN SVFAVQDELD
1201  RVFAEDRRNA VWTSGIRDTK HYRSQDFRAY RQQTDLRQIG MQKNLGSGRV
1251  GILFSHNRTE NTFDDGIGNS ARLAHGAVFG QYGIDRFYIG ISAGAGFSSG
1301  SLSDGIGGKI RRRVLHYGIQ ARYRAGFGGF GIEPHIGATR YFVQKADYRY
1351  ENVNIATPGL AFNRYRAGIK ADYSFKPAQH ISITPYLSLS YTDAASGKVR
1401  TRVNTAVLAQ DFGKTRSAEW GVNAEIKGFT LSLHAAAAKG PQLEAQHSAG
1451  IKLGYRW*
```

The following partial DNA sequence was identified in *N. meningitidis* <SEQ ID 88>:

orf46-2.seq

```
   1  TTGGGCATTT CCCGCAAAAT ATCCCTTATT CTGTCCATAC TGGCAGTGTG
  51  CCTGCCGATG CATGCACACG CCTCAGATTT GGCAAACGAT TCTTTTATCC
 101  GGCAGGTTCT CGACCGTCAG CATTTCGAAC CCGACGGGAA ATACCACCTA
 151  TTCGGCAGCA GGGGGGAACT TGCCGAGCGC AGCGGCCATA TCGGATTGGG
 201  AAAAATACAA AGCCATCAGT TGGGCAACCT GATGATTCAA CAGGCGGCCA
 251  TTAAAGGAAA TATCGGCTAC ATTGTCCGCT TTTCCGATCA CGGGCACGAA
 301  GTCCATTCCC CCTTCGACAA CCATGCCTCA CATTCCGATT CTGATGAAGC
 351  CGGTAGTCCC GTTGACGGAT TTAGCCTTTA CCGCATCCAT TGGGACGGAT
```

```
 401  ACGAACACCA TCCCGCCGAC CGCTATGACG GGCCACAGGG CGGCGGCTAT
 451  CCCGCTCCCA AAGGCGCGAG GGATATATAC AGCTACGACA TAAAAGGCGT
 501  TGCCCAAAAT ATCCGCCTCA ACCTGACCGA CAACCGCAGC ACCGGACAAC
 551  GGCTTGCCGA CCGTTTCCAC AATGCCGGTA GTATGCTGAC GCAAGGAGTA
 601  GGCGACGGAT TCAAACGCGC CACCCGATAC AGCCCCGAGC TGGACAGATC
 651  CGGCAATGCC CCCGAAGCCT TCAACGGCAC TGCAGATATC GTTAAAAACA
 701  TCATCGGCGC GGCAGGAGAA ATTGTCGGCG CAGGCGATGC CGTGCAGGGC
 751  ATAAGCGAAG GCTCAAACAT TGCTGTCATG CACGGCTTGG GTCTGCTTTC
 801  CACCGAAAAC AAGATGGCGC GCATCAACGA TTTGGCAGAT ATGGCGCAAC
 851  TCAAAGACTA TGCCGCAGCA GCCATCCGCG ATTGGGCAGT CCAAAACCCC
 901  AATGCCGCAC AAGGCATAGA AGCCGTCAGC AATATCTTTA TGGCAGCCAT
 951  CCCCATCAAA GGGATTGGAG CTGTTCGGGG AAAATACGGC TTGGGCGGCA
1001  TCACGGCACA TCCTATCAAG CGGTCGCAGA TGGGCGCGAT CGCATTGCCG
1051  AAAGGGAAAT CCGCCGTCAG CGACAATTTT GCCGATGCGG CATACGCCAA
1101  ATACCCGTCC CCTTACCATT CCCGAAATAT CCGTTCAAAC TTGGAGCAGC
1151  GTTACGGCAA AGAAAACATC ACCTCCTCAA CCGTGCCGCC GTCAAACGGC
1201  AAAAATGTCA AACTGCCACA CCAACCCCAC CCCAAGACAG GCGTACCCTT
1251  TGACGGTAAA GGGTTTCCGA ATTTTGAGAA GCACGTGAAA TATGATACGA
1301  AGCTCGATAT TCAAGAATTA TCGGGGGGCG GTATACCTAA GGCTAAGCCT
1351  GTGTTTGATG CGAAACCGAG ATGGGAGGTT GATAGGAAGC TTAATAAATT
1401  GACAACTCGT GAGCAGGTGG AGAAAAATGT TCAGGAAATA AGGAACGGTA
1451  ATATAAACAG TAACTTTAGC CAACATCCTC AACTAGAGAG GGAAATTAAT
1501  AAACTAAAAT CTGCCGATGA AATTAATTTT GCAGATGGAA TGGGAAAATT
1551  TACCGATAGC ATGAATGACA AGGCTTTTAG TAGGCTTGTG AAATCAGTTA
1601  AAGAGAATGG CTTCACAAAT CCAGTTGTGG AGTACGTTGA AATAAATGGA
1651  AAAGCATATA TCGTAAGAGG AAATAATRGG GTTTTTGCTG CAGAATACCT
1701  TGGCAGGATA CATGAATTAA AATTTAAAAA AGTTGACTTT CCTGTTCCTA
1751  ATACTAGTTG GAAAAATCCT ACTGATGTCT TGAATGAATC AGGTAATGTT
1801  AAGAGACCTC GTTATAGGAG TAAATAA
```

This corresponds to the amino acid sequence <SEQ ID 89; ORF orf46-2>:

```
orf46-2.pep
  1  LGISRKISLI LSILAVCLPM HAHASDLAND SFIRQVLDRQ HFEPDGKYHL
 51  FGSRGELAER SGHIGLGKIQ SHQLGNLMIQ QAAIKGNIGY IVRFSDHGHE
101  VHSPFDNHAS HSDSDEAGSP VDGFSLYRIH WDGYEHHPAD GYDGPQGGGY
151  PAPKGARDIY SYDIKGVAQN IRLNLTDNRS TCQRLADRFH NAGSMLTQGV
201  GDGFKRATRY SPELDRSGNA AEAFNGTADI VKNIIGAAGE IVGAGDAVQG
251  ISEGSNIAVM HGLGLLSTEN KMARINDLAD MAQLKDYAAA AIRDWAVQNP
301  NAAQGIEAVS NIFMAAIPIK GIGAVRGKYG LGGITAHPIK RSQMGAIALP
351  KGKSAVSDNF ADAAYAKYPS PYHSRNIRSN LEQRYGKENI TSSTVPPSNG
401  KNVKLADQRH PKTGVPFDGK GFPNFEKHVK YDTKLDIQEL SCGGIPKAKP
451  VFDAKPRWEV DRKLNKLTTR EQVEKNVQEI RNGNINSNFS QHAQLEREIN
501  KLKSADEINF ADGMGKFTDS MNDKAFSRLV KSVKENGFTN PVVEYVEING
551  KAYIVRGNNR VFAAEYLGRI HELKFKKVDF PVPNTSWKNP TDVLNESGNV
601  KRPRYRSK*
```

Using the above-described procedures, the following oligonucleotide primers were employed in the polymerase chain reaction (PCR) assay in order to clone the ORFs as indicated:

Oligonucleotides used for PCR

Table 1

ORF	Primer	Sequence	Restriction sites
279	Forward	CGCGGATCCCATATG-TTGCCTGCAATCACGATT <SEQ ID 90>	BamHI-NdeI
	Reverse	CCCGCTCGAG-TTTAGAAGCGGGCGGCAA <SEQ ID 91>	XhoI
519	Forward	CGCGGATCCCATATG-TTCAAATCCTTTGTCGTCA <SEQ ID 92>	BamHI-NdeI
	Reverse	CCCGCTCGAG-TTTGGCGGTTTTGCTGC <SEQ ID 93>	XhoI
576	Forward	CGCGGATCCCATATG-GCCGCCCCCGCATCT <SEQ ID 94>	BamHI-NdeI
	Reverse	CCCGCTCGAG-ATTTACTTTTTTGATGTCGAC <SEQ ID 95>	XhoI
919	Forward	CGCGGATCCCATATG-TGCCAAAGCAAGAGCATC <SEQ ID 96>	BamHI-NdeI
	Reverse	CCCGCTCGAG-CGGGCGGTATTCGGG <SEQ ID 97>	XhoI
121	Forward	CGCGGATCCCATATG-GAAACACAGCTTTACAT <SEQ ID 98>	BamHI-NdeI
	Reverse	CCCGCTCGAG-ATAATAATATCCCGCGCCC <SEQ ID 99>	XhoI
128	Forward	CGCGGATCCCATATG-ACTGACAACGCACT <SEQ ID 100>	BamHI-NdeI
	Reverse	CCCGCTCGAG-GACCGCGTTGTCGAAA <SEQ ID 101>	XhoI
206	Forward	CGCGGATCCCATATG-AAACACCGCCAACCGA <SEQ ID 102>	BamHI-NdeI
	Reverse	CCCGCTCGAG-TTCTGTAAAAAAAGTATGTGC <SEQ ID 103>	XhoI
287	Forward	CCGGAATTCTAGCTAGC-CTTTCAGCCTGCGGG <SEQ ID 104>	EcoRI-NheI
	Reverse	CCCGCTCGAG-ATCCTGCTCTTTTTTGCC <SEQ ID 105>	XhoI
406	Forward	CGCGGATCCCATATG-TGCGGGACACTGACAG <SEQ ID 106>	BamHI-NdeI
	Reverse	CCCGCTCGAG-AGGTTGTCCTTGTCTATG <SEQ ID 107>	XhoI

EXAMPLE 2

Expression of ORF 919

The primer described in Table 1 for ORF 919 was used to locate and clone ORF 919. The predicted gene *919* was cloned in pET vector and expressed in *E. coli*. The product of

protein expression and purification was analyzed by SDS-PAGE. In panel A) is shown the analysis of 919-His fusion protein purification. Mice were immunized with the purified 919-His and sera were used for Western blot (panel B), FACS analysis (panel C), bactericidal assay (panel D), and ELISA assay (panel E). Symbols: M1, molecular weight marker; PP, purified protein, TP, *N. meningitidis* total protein extract; OMV, *N. meningitidis* outer membrane vesicle preparation. Arrows indicate the position of the main recombinant protein product (A) and the *N. meningitidis* immunoreactive band (B). These experiments confirm that 919 is a surface-exposed protein and that it is a useful immunogen. The hydrophilicity plots, antigenic index, and amphipatic regions of ORF 919 are provided in Figure 10. The AMPHI program is used to predict putative T-cell epitopes (Gao et al 1989, *J. Immunol* 143:3007; Roberts et al. 1996, *AIDS Res Human Retroviruses* 12:593; Quakyi et al. 1992, *Scand J Immunol Suppl* 11:9). The nucleic acid sequence of ORF 919 and the amino acid sequence encoded thereby is provided in Example 1.

EXAMPLE 3

Expression of ORF 279

The primer described in Table 1 for ORF 279 was used to locate and clone ORF 279. The predicted gene *279* was cloned in pGex vector and expressed in *E. coli*. The product of protein expression and purification was analyzed by SDS-PAGE. In panel A) is shown the analysis of 279-GST purification. Mice were immunized with the purified 279-GST and sera were used for Western blot analysis (panel B), FACS analysis (panel C), bactericidal assay (panel D), and ELISA assay (pancl E). Symbols: M1, molecular weight marker; TP, *N. meningitidis* total protein extract; OMV, *N. meningitidis* outer membrane vescicle preparation. Arrows indicate the position of the main recombinant protein product (A) and the *N. meningitidis* immunoreactive band (B). These experiments confirm that 279 is a surface-exposed protein and that it is a useful immunogen. The hydrophilicity plots, antigenic index, and amphipatic regions of ORF 279 are provided in Figure 11. The AMPHI program is used to predict putative T-cell epitopes (Gao et al 1989, *J. Immunol* 143:3007; Roberts et al. 1996, *AIDS Res Human Retroviruses* 12:593; Quakyi et al. 1992, *Scand J Immunol Suppl* 11:9). The nucleic acid sequence of ORF 279 and the amino acid sequence encoded thereby is provided in Example 1.

EXAMPLE 4

Expression of ORF 576

The primer described in Table 1 for ORF 576 was used to locate and clone ORF 576. The predicted gene *576* was cloned in pGex vector and expressed in *E. coli*. The product of protein purification was analyzed by SDS-PAGE. In panel A) is shown the analysis of 576-GST fusion protein purification. Mice were immunized with the purified 576-GST and sera were used for Western blot (panel B), FACS analysis (panel C), bactericidal assay (panel D), and ELISA assay (panel E). Symbols: M1, molecular weight marker; TP, *N. meningitidis* total protein extract; OMV, *N. meningitidis* outer membrane vescicle preparation. Arrows indicate the position of the main recombinant protein product (A) and the *N. meningitidis* immunoreactive band (B).. These experiments confirm that ORF 576 is a surface-exposed protein and that it is a useful immunogen. The hydrophilicity plots, antigenic index, and amphipatic regions of ORF 576 are provided in Figure 12. The AMPHI program is used to predict putative T-cell epitopes (Gao et al 1989, *J. Immunol* 143:3007; Roberts et al. 1996, *AIDS Res Human Retroviruses* 12:593; Quakyi et al. 1992, *Scand J Immunol Suppl* 11:9). The nucleic acid sequence of ORF 576 and the amino acid sequence encoded thereby is provided in Example 1.

EXAMPLE 5

Expression of ORF 519

The primer described in Table 1 for ORF 519 was used to locate and clone ORF 519. The predicted gene *519* was cloned in pET vector and expressed in *E. coli*. The product of protein purification was analyzed by SDS-PAGE. In panel A) is shown the analysis of 519-His fusion protein purification. Mice were immunized with the purified 519-His and sera were used for Western blot (panel B), FACS analysis (panel C), bactericidal assay (panel D), and ELISA assay (panel E). Symbols: M1, molecular weight marker; TP, *N. meningitidis* total protein extract; OMV, *N. meningitidis* outer membrane vesicle preparation. Arrows indicate the position of the main recombinant protein product (A) and the *N. meningitidis* immunoreactive band (B). These experiments confirm that 519 is a surface-exposed protein

and that it is a useful immunogen. The hydrophilicity plots, antigenic index, and amphipatic regions of ORF 519 are provided in Figure 13. The AMPHI program is used to predict putative T-cell epitopes (Gao et al 1989, *J. Immunol* 143:3007; Roberts et al. 1996, *AIDS Res Human Retroviruses* 12:593; Quakyi et al. 1992, *Scand J Immunol Suppl* 11:9). The nucleic acid sequence of ORF 519 and the amino acid sequence encoded thereby is provided in Example 1.

EXAMPLE 6

Expression of ORF 121

The primer described in Table 1 for ORF 121 was used to locate and clone ORF 121. The predicted gene *121* was cloned in pET vector and expressed in *E. coli*. The product of protein purification was analyzed by SDS-PAGE. In panel A) is shown the analysis of 121-His fusion protein purification. Mice were immunized with the purified 121-His and sera were used for Western blot analysis (panel B), FACS analysis (panel C), bactericidal assay (panel D), and ELISA assay (panel E). Results show that 121 is a surface-exposed protein. Symbols: M1, molecular weight marker; TP, *N. meningitidis* total protein extract; OMV, *N. meningitidis* outer membrane vescicle preparation. Arrows indicate the position of the main recombinant protein product (A) and the *N. meningitidis* immunoreactive band (B). These experiments confirm that 121 is a surface-exposed protein and that it is a useful immunogen. The hydrophilicity plots, antigenic index, and amphipatic regions of ORF 121 are provided in Figure 14. The AMPHI program is used to predict putative T-cell epitopes (Gao et al 1989, *J. Immunol* 143:3007; Roberts et al. 1996, *AIDS Res Human Retroviruses* 12:593; Quakyi et al. 1992, *Scand J Immunol Suppl* 11:9). The nucleic acid sequence of ORF 121 and the amino acid sequence encoded thereby is provided in Example 1.

EXAMPLE 7

Expression of ORF 128

The primer described in Table 1 for ORF 128 was used to locate and clone ORF 128. The predicted gene *128* was cloned in pET vector and expressed in *E. coli*. The product of protein purification was analyzed by SDS-PAGE. In panel A) is shown the analysis of 128-His purification. Mice were immunized with the purified 128-His and sera were used for

Western blot analysis (panel B), FACS analysis (panel C), bactericidal assay (panel D) and ELISA assay (panel E). Results show that 128 is a surface-exposed protein. Symbols: M1, molecular weight marker; TP, *N. meningitidis* total protein extract; OMV, *N. meningitidis* outer membrane vesicle preparation. Arrows indicate the position of the main recombinant protein product (A) and the *N. meningitidis* immunoreactive band (B). These experiments confirm that 128 is a surface-exposed protein and that it is a useful immunogen. The hydrophilicity plots, antigenic index, and amphipatic regions of ORF 128 are provided in Figure 15. The AMPHI program is used to predict putative T-cell epitopes (Gao et al 1989, *J. Immunol* 143:3007; Roberts et al. 1996, *AIDS Res Human Retroviruses* 12:593; Quakyi et al. 1992, *Scand J Immunol Suppl* 11:9). The nucleic acid sequence of ORF 128 and the amino acid sequence encoded thereby is provided in Example 1.

EXAMPLE 8

Expression of ORF 206

The primer described in Table 1 for ORF 206 was used to locate and clone ORF 206. The predicted gene *206* was cloned in pET vector and expressed in *E. coli*. The product of protein purification was analyzed by SDS-PAGE. In panel A) is shown the analysis of 206-His purification. Mice were immunized with the purified 206-His and sera were used for Western blot analysis (panel B). It is worthnoting that the immunoreactive band in protein extracts from meningococcus is 38 kDa instead of 17 kDa (panel A). To gain information on thc nature of this antibody staining we expressed ORF 206 in *E. coli* without the His-tag and including the predicted leader peptide. Western blot analysis on total protein extracts from *E. coli* expressing this native form of the 206 protein showed a recative band at a position of 38 kDa, as observed in meningococcus. We conclude that the 38 kDa band in panel B) is specific and that anti-206 antibodies, likely recognize a multimeric protein complex. In panel C is shown the FACS analysis, in panel D the bactericidal assay, and in panel E) the ELISA assay. Results show that 206 is a surface-exposed protein. Symbols: M1, molecular weight marker; TP, *N. meningitidis* total protein extract; OMV, *N. meningitidis* outer membrane vesicle preparation. Arrows indicate the position of the main recombinant protein product (A) and the *N. meningitidis* immunoreactive band (B). These experiments confirm that 206 is a surface-exposed protein and that it is a useful immunogen. The hydrophilicity plots,

antigenic index, and amphipatic regions of ORF 519 are provided in Figure 16. The AMPHI program is used to predict putative T-cell epitopes (Gao et al 1989, *J. Immunol* 143:3007; Roberts et al. 1996, *AIDS Res Human Retroviruses* 12:593; Quakyi et al. 1992, *Scand J Immunol Suppl* 11:9). The nucleic acid sequence of ORF 206 and the amino acid sequence encoded thereby is provided in Example 1.

EXAMPLE 9

Expression of ORF 287

The primer described in Table 1 for ORF 287 was used to locate and clone ORF 287. The predicted gene *287* was cloned in pGex vector and expressed in *E. coli.* The product of protein purification was analyzed by SDS-PAGE. In panel A) is shown the analysis of 287-GST fusion protein purification. Mice were immunized with the purified 287-GST and sera were used for FACS analysis (panel B), bactericidal assay (panel C), and ELISA assay (panel D). Results show that 287 is a surface-exposed protein. Symbols: M1, molecular weight marker. Arrow indicates the position of the main recombinant protein product (A). These experiments confirm that 287 is a surface-exposed protein and that it is a useful immunogen. The hydrophilicity plots, antigenic index, and amphipatic regions of ORF 287 are provided in Figure 17. The AMPHI program is used to predict putative T-cell epitopes (Gao et al 1989, *J. Immunol* 143:3007; Roberts et al. 1996, *AIDS Res Human Retroviruses* 12:593; Quakyi et al. 1992, *Scand J Immunol Suppl* 11:9). The nucleic acid sequence of ORF 287 and the amino acid sequence encoded thereby is provided in Example 1.

EXAMPLE 10

Expression of ORF 406

The primer described in Table 1 for ORF 406 was used to locate and clone ORF 406. The predicted gene *406* was cloned in pET vector and expressed in *E. coli*. The product of protein purification was analyzed by SDS-PAGE. In panel A) is shown the analysis of 406-His fusion protein purification. Mice were immunized with the purified 406-His and sera were used for Western blot analysis (panel B), FACS analysis (panel C), bactericidal assay (panel D), and ELISA assay (panel E). Results show that 406 is a surface-exposed protein. Symbols: M1, molecular weight marker; TP, *N. meningitidis* total protein extract; OMV, *N.*

meningitidis outer membrane vescicle preparation. Arrows indicate the position of the main recombinant protein product (A) and the *N. meningitidis* immunoreactive band (B). These experiments confirm that 406 is a surface-exposed protein and that it is a useful immunogen. The hydrophilicity plots, antigenic index, and amphipatic regions of ORF 406 are provided in Figure 18. The AMPHI program is used to predict putative T-cell epitopes (Gao et al 1989, *J. Immunol* 143:3007; Roberts et al. 1996, *AIDS Res Human Retroviruses* 12:593; Quakyi et al. 1992, *Scand J Immunol Suppl* 11:9). The nucleic acid sequence of ORF 406 and the amino acid sequence encoded thereby is provided in Example 1.

The foregoing examples are intended to illustrate but not to limit the invention.

Claims

1. A method for identifying an amino acid sequence, comprising the step of searching for putative open reading frames or protein-coding sequences within one or more of *N. meningitidis* nucleotide sequences selected from the group consisting of SEQ ID NO 1 and the NMB open reading frames.

2. A method according to claim 1, comprising the steps of searching a *N. meningitidis* nucleotide sequence for an initiation codon and searching the upstream sequence for an in-frame termination codon.

3. A method for producing a protein, comprising the step of expressing a protein comprising an amino acid sequence identified according to any one of claims 1-2.

4. A method for identifying a protein in *N. mengitidis*, comprising the steps of producing a protein according to claim 3, producing an antibody which binds to the protein, and determining whether the antibody recognises a protein produced by *N. menigitidis*.

5. Nucleic acid comprising an open reading frame or protein-coding sequence identified by a method according to any one of claims 1-2.

6. A protein obtained by the method of claim 3.

7. Nucleic acid comprising one or more of the *N. meningitidis* nucleotide sequences selected from the group consisting of SEQ ID NO 1 and the NMB open reading frames.

8. Nucleic acid comprising a nucleotide sequence having greater than 50% sequence identity to a nucleotide sequence selected from the group consisting of SEQ ID NO 1 and the NMB open reading frames.

9. Nucleic acid comprising a fragment of a nucleotide sequence selected from the group consisting of SEQ ID NO 1 and the NMB open reading frames.

10. Nucleic acid according to claim 9, wherein the fragment is unique to the genome of *N. meningitidis*.

11. Nucleic acid complementary to the nucleic acid of any one of claims 7-10.

12. A protein comprising an amino acid sequence encoded within one or more of the *N. meningitidis* nucleotide sequences selected from the group consisting of SEQ ID NO 1 and the NMB open reading frames.

13. A protein comprising an amino acid sequences having greater than 50% sequence identity to an amino acid sequence encoded within one or more of the *N. meningitidis* nucleotide sequences selected from the group consisting of SEQ ID NO 1 and the NMB open reading frames.

14. A protein comprising a fragment of an amino acid sequence encoded within one or more of the *N. meningitidis* nucleotide sequences selected from the group consisting of SEQ ID NO 1 and the NMB open reading frames.

15. Nucleic acid encoding a protein according to any one of claims 6-8.

16. A computer, a computer memory, a computer storage medium or a computer database containing the nucleotide sequence of a nucleic acid according to any one of claims 7-11.

17. A computer, a computer memory, a computer storage medium or a computer database containing one or more of the *N. meningitidis* nucleotide sequences selected from the group consisting of SEQ ID NO 1 and the NMB open reading frames.

18. A polyclonal or monoclonal antibody which binds to a protein according to any one of claims 12-14 or 6.

19. A nucleic acid probe comprising nucleic acid according to any one of claims 5, 7-10, or 15.

20. An amplification primer comprising nucleic acid according to any one of claims 5, 7-10, or 15.

21. A composition comprising (a) nucleic acid according to any one of claims 5, 7-10, or 15; (b) protein according to any one of claims 12-14; and/or (c) an antibody according to claim 18.

22. The use of a composition according to claim 21 as a medicament or as a diagnostic reagent.

23. The use of a composition according to claim 21 in the manufacture of (a) a medicament for treating or preventing infection due to Neisserial bacteria and/or (b) a diagnostic reagent for detecting the presence of Neisserial bacteria or of antibodies raised against Neisserial bacteria.

24. A method of treating a patient, comprising administering to the patient a therapeutically effective amount of a composition according to claim 21.

FIG. 1A

919 (46 kDa)

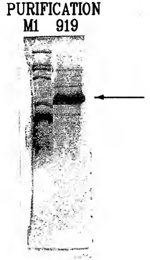


FIG. 1B

919 (46 kDa)

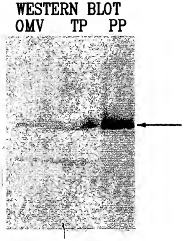


FIG. 1C

919 (46 kDa)

FACS

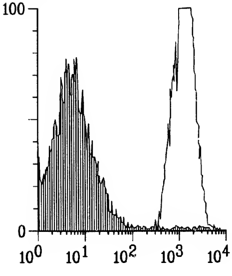


FIG. 1D

919 (46 kDa)

BACTERICIDAL ASSAY

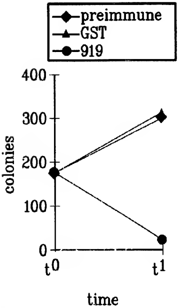


FIG. 1E

919 (46 kDa)

ELISA assay: <u>positive</u>

FIG. 2A

279 (10.5 kDa)
PURIFICATION
M1 279

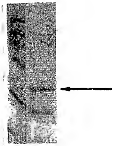


FIG. 2B

279 (10.5 kDa)
WESTERN BLOT
TP OMV

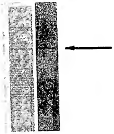


FIG. 2C

279 (10.5 kDa)
FACS

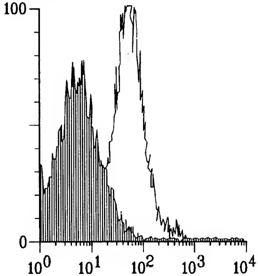


FIG. 2D

279 (10.5 kDa)
BACTERICIDAL ASSAY

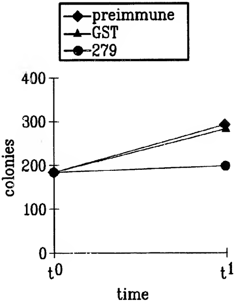


FIG. 2E

279 (10.5 kDa)

ELISA assay: <u>positive</u>

FIG. 3A

576 (27.8 kDa)
PURIFICATION
M1 576

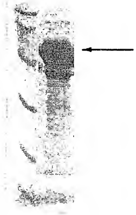


FIG. 3B

576 (27.8 kDa)
WESTERN BLOT
TP OMV

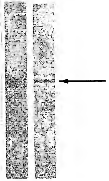


FIG. 3C

576 (27.8 kDa)
FACS

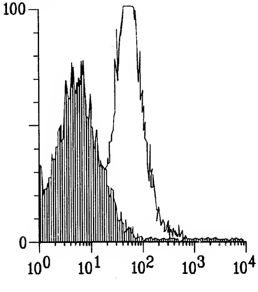


FIG. 3D

576 (27.8 kDa)
BACTERICIDAL ASSAY

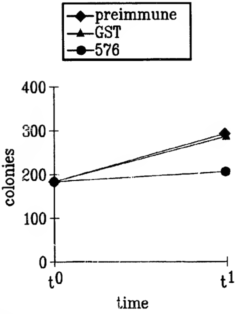


FIG. 3E

576 (27.8 kDa)
ELISA assay: <u>positive</u>

FIG. 4A

519 (33 kDa)
PURIFICATION
M1 519

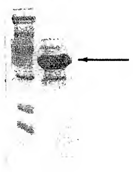


FIG. 4B

519 (33 kDa)
WESTERN BLOT
TP OMV

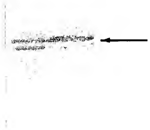


FIG. 4C

519 (33 kDa)
FACS

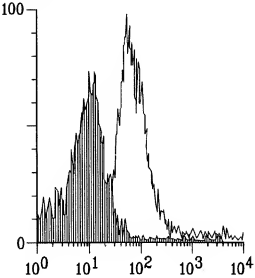


FIG. 4D

519 (33 kDa)
BACTERICIDAL ASSAY

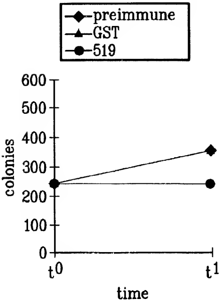


FIG. 4E

519 (33 kDa)
ELISA assay: <u>positive</u>

FIG. 5A

121 (40 kDa)
PURIFICATION
M1 121

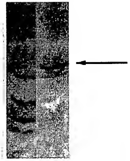


FIG. 5B

121 (40 kDa)
WESTERN BLOT
TP OMV

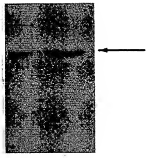


FIG. 5C

121 (40 kDa)
FACS

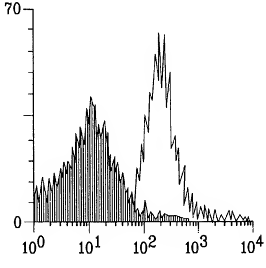


FIG. 5D

121 (40 kDa)
BACTERICIDAL ASSAY

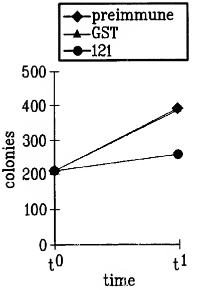


FIG. 5E

121 (40 kDa)

ELISA assay: <u>positive</u>

FIG. 6A

128 (101 kDa)
PURIFICATION

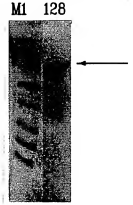


FIG. 6B

128 (101 kDa)
WESTERN BLOT

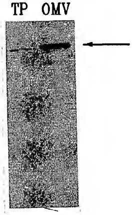


FIG. 6C

128 (101 kDa)
FACS

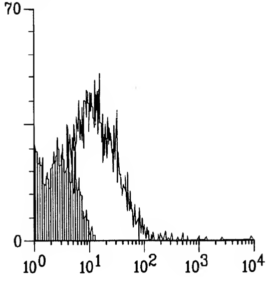


FIG. 6D

128 (101 kDa)
BACTERICIDAL ASSAY

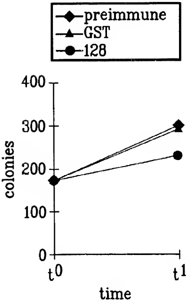


FIG. 6E

128 (101 kDa)
ELISA assay: positive

FIG. 7A

206 (17 kDa)
PURIFICATION

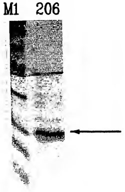


FIG. 7B

206 (17 kDa)
WESTERN BLOT

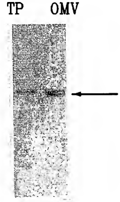


FIG. 7C

206 (17 kDa)
FACS

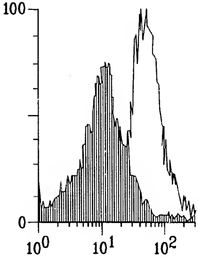


FIG. 7D

206 (17 kDa)
BACTERICIDAL ASSAY

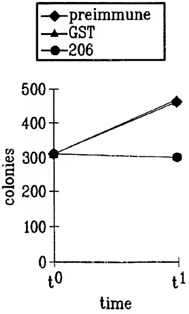


FIG. 7E

206 (17 kDa)

ELISA assay: <u>positive</u>

FIG. 8A

287 (78 kDa)
PURIFICATION

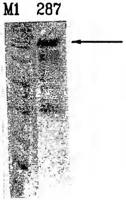


FIG. 8B

287 (78 kDa)
FACS

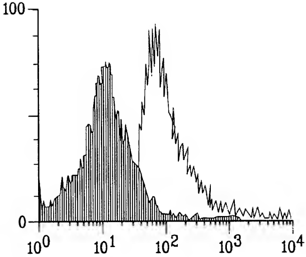


FIG. 8C

287 (78 kDa)
BACTERICIDAL ASSAY

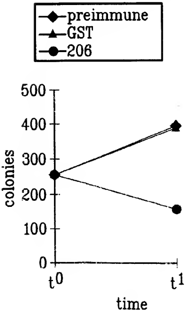


FIG. 8D

287 (78 kDa)
ELISA assay: <u>positive</u>

FIG. 9A

406 (33 kDa)
PURIFICATION
M1 406

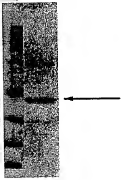


FIG. 9B

406 (33 kDa)
WESTERN BLOT
TP OMV

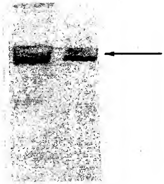


FIG. 9C

406 (33 kDa)
FACS

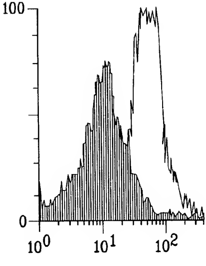


FIG. 9D

406 (33 kDa)
BACTERICIDAL ASSAY

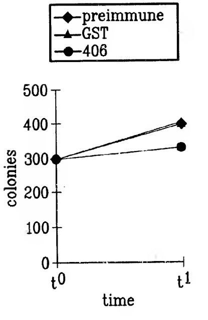


FIG. 9E

406 (33 kDa)
ELISA assay: <u>positive</u>

919

Hydrophilicity Plot, Antigenic Index and AMPHI Regions

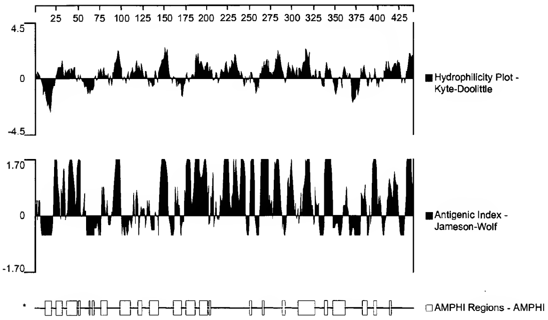


Fig. 10

279
Hydrophilicity Plot, Antigenic Index and AMPHI Regions

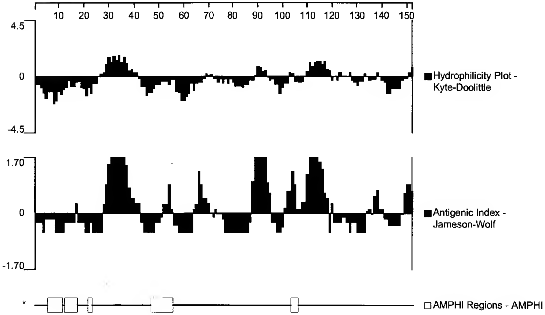


Fig. 11

576-1
Hydrophilicity Plot, Antigenic Index and AMPHI Regions

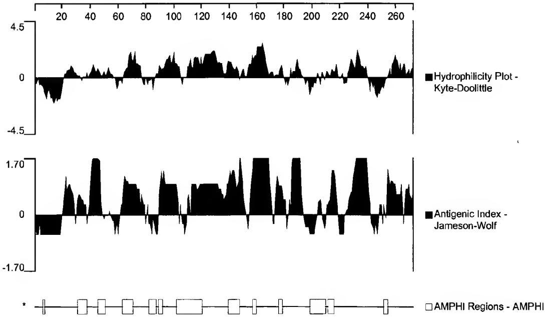


Fig. 12

519-1
Hydrophilicity Plot, Antigenic Index and AMPHI Regions

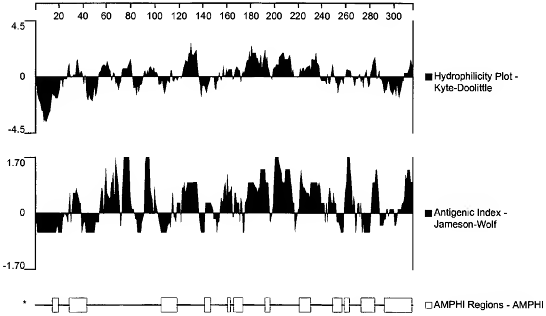


Fig. 13

121-1
Hydrophilicity Plot, Antigenic Index and AMPHI Regions

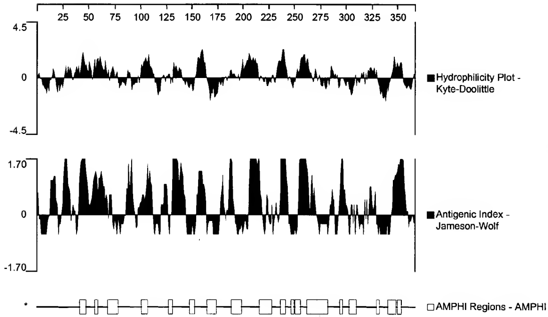


Fig. 14

128-1
Hydrophilicity Plot, Antigenic Index and AMPHI Regions

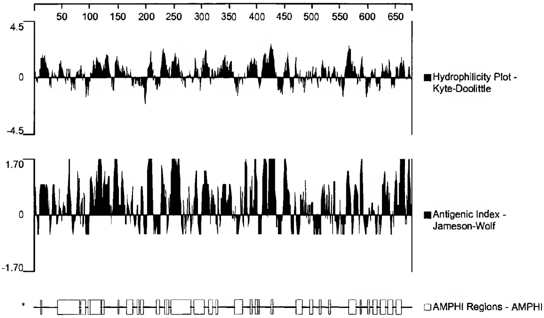


Fig. 15

206
Hydrophilicity Plot, Antigenic Index and AMPHI Regions

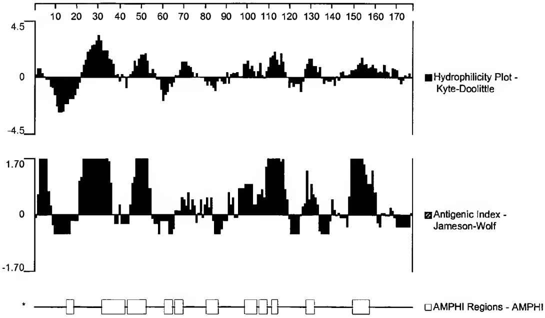


Fig. 16

287
Hydrophilicity Plot, Antigenic Index and AMPHI Regions

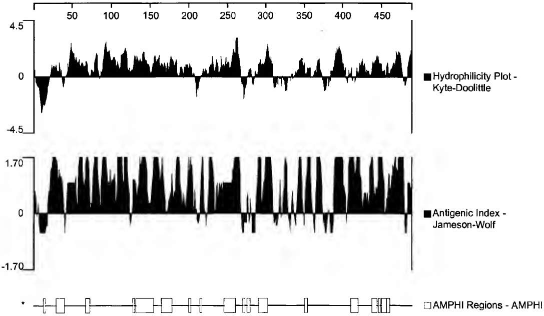


Fig. 17

406
Hydrophilicity Plot, Antigenic Index and AMPHI Regions

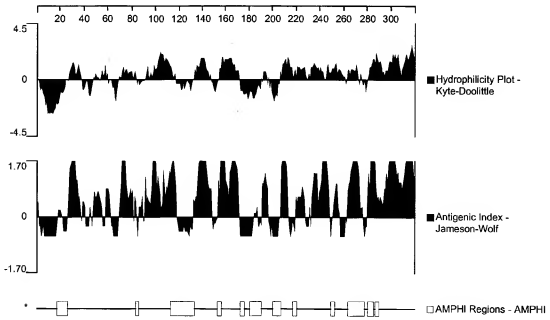


Fig. 18

APPENDIX A

The following DNA sequence was identified in *N. meningitidis B* <SEQ ID NO. 1>:

TAAACCTTATCCACATCCAAACGCATAACCGTAACCCATTCACCGTTATGCAAATCTCGC
CCGACAACCACCCAGCCGAATGATTCATAAAATATTTCCACATCAGGCGTATAAAGATAC
AAGAACTTTATCCCCAGCGAACGCGCTCCGCCTATGCAGTGCCCGACCAGCCTCCTGCCA
ATGCCTTTTCCGCGATATTCAGGTAAAACAAAGACATCCCCCAACCAATATTCATACCGT
GGAAAACTTTCCATATCATGCCGCTTGACCGCAGCCGAACCCAACAGCATTCCGGAATCA
TCCACAGCCGCAAATGCCAGCGGCAGTTCGTCATCCTTCAAACACCTGCCGTAATAGGCA
TGAATCTTATCCACAGAAGACCACGGTTCAAATCCGTGCCACTCCTCAAACAACGCCTGA
ACCAACCTGCCGATATGCCCGGCTTTCAGCCGTCTAATGAAAACAGTATTGTCCACAAAG
AGCGAATTCATCCCTCAATTCCCCGACGCCTTCCTTCCCCCTGCGCCGTAAACCGCATTC
CAACCATGGTCCAAACGCACTCCGATTTGCCTCAAATCTTCAGCCTGCCGGGCTTTTTGC
GCCATTGCTGCAGGAATTTCCGCTTCCAAACGGCCGATGTCTGCCTGAGCCGTCTCCAAA
CGCCGGCGCGCATCTTCCAAATCCGACTGCATCCCGATGATTTTTCCGTCCAGATTGTTT
TGCTTTTGCAATAAGGCGCGGTAACCGGATTGGATGCTGAGCAGATTGTCTTCAGCATCC
CCTGCCCATACGCTTGTAGAAAAAACAACCATCAGAAAATAAAATATTTTTTTCATTTTT
AACTTCCATTTAAATGCTGTCTGAAGCCGTATTCCGACATCAGACGGCATCGCCCACGCC
TGTGGATAACTTAAGCGCGGATGCGTTTCAACACTTCTTCTTTGCCGATTAATGCCAACA
CACCATCCACGCTGGGGGTTTTCGCCGTACCGCAGACGGCAAGGCGCAGGGGCATGCCGA
GTTTGCCCATTTTAATGCCTTCTTCGTCGCAGAAGGGTTTGAAGAGGTCGTGGATGGCTT
CGGCATTCCAGTCTTCCAGCCCTTCGAGGCGTTCGGCAAAGCGCAGCATACGGGCGGCGG
CTTCATCGTCCCAGTGTTTCTGCACGTCTGCTTCGGCAGGCCTTTGTTTGACGTAGAAGT
AGAAGCACTCGTCGGCAAGCGTGTTCAAGTCTTGGGGCCGGTCTTTGACCAGTTCCAACA
CATCTTCCAAAGCAGGTTTTTCGGTTTCATGAATATCCCGCAACGCAAGGCGGGCTTTGA
CGAGTTCGGCGAGTTTGCCGTTGGGTGTGATTTTGATGTGTTCGCCGTTGATCCAGTAGA
GTTTTTTCAAGTCCATACGGCTTGGAGACGGGGAAACGTCTTTCAAATCAAACCATTCGA
TGAATTGTTCCATTGTGAAGAATTCATCGTCGCCGTGCGCCCAGCCCAAGCGTGCCAGAT
AGTTGAGCATCGCTTCCCGCAGGATGCCCATTGCGCCGAAATCGGTAATGGCAACGGTAT
CGCCGCTCCGTTTGGACATTTTTTTGCCTTGTTCGTTAAGAATCATCGGCAGGTGGCCGT
ATTCGGGCAGGTTCGCGTCGATGGCTTTTAAGATGTTGATTTGTTTCGGCGTGTTGTTCA
CATGGTCGTCGCCGCGGATAACGTGGGTAACGCCCATGTCGTAGTCGTCTACGACAACGC
AGAAGTTGTAGGTCGGCGTACCGTCGGCGCGGGCGATAATCAGGTCATCGAGTGCTTCGT
TGGGGATGGAGATTTCGCCTTTGACCAAGTCTGTCCATTTGGTCACACCGTCCAAAGGCG
TTTTGAAACGGACAACGGGTTGTACGTCGGACGGGATTTCGGGCAGGGTTTTACCTACTT
CCGCACGCCAGCGGCGGTCGTAAGTCGCCGAGCCTTCTTTTTCGGCTTTCTCACCCATGC
CTTCCAGCTCTTCTTTGCTGCAATAGCAGTAGTAGGCATGGCCTTTTTCTAAAAGTTCGG
CAATGACCTCTTTGTAGCGGTCGAAACGGCGAGTTTGGTAAACGACGTTGTCGGCGTTGT
CGTAATTGAGACCGACCCATTTCATGCCGTCGAGGATGATGTTGACGGATTCGGCGGTAG
AACGCGCCAAGTCGGTGTCTTCAATACGTAATAGGAACTCGCCTTTATGATGGCGGGCAA
ACGCCCATGAAAACAAGGCGGTGCGCACGCCGCCGATCTGCACGTAGCCGCTGGGGCTGG
GGGCGAAACGGGTTTTGACGGTCATGATGGCTCCGAAATCTTTGAAAGCGTTTATTTTAC
TGGTTTTACCGTGCTTGGGCATCAAAAATGCCGTCTGAACCCTGCCTGCGGATAAAGTTT
CACACGGCATTTTCCTTGTTTTCAATGCTTCGGCACGCGGAACAGTGTATCACGCGCCGC
CGACCGAATTCCTTCGGGATTGCGTCCAAAAAAAAGTTCAATGAAACAGCTAATTGAAAA
AATCCCGCCCCCATTTTTCCAAACGGTAGAGGGATAACGCATATCCCTCTTGCAGCATAA
AGATTTTTTTCTTATTTCCCGCATCAAACCGCGTGGTCGGCGTGGCAGACATATAAACGC
GGACACCCAAATCCTCCGCCATTTCCGCCGCCCGCGCCAAATGGTAGGGATCGCTCACAA
TCACCACGCTGGCAATACCGTTGGCACGCAAAACCGGACGGATGTTGTTCACGTTTTCAT
AAGTGTTGCGCGAAGTGTTTTCAAACAGCATGTTGCGCGCCGGAACCCCCTGTTTCAGTG
CGTACCGCCGCCCGACCTCGGCTTCGGTCATATAGCCTTTTTTGGTCCGGCCTCCCGTAA
ACACGATTTTGCCTACCCTGCGGCTCTGATAAAGTGCGATGGCATGGTTGATGCGTTCGC
GGAAAACAGGAGAAGGGCGTTTGTCCCACGCGGCGGCGCCCAACACCAGCGCGGCATCCG
CCCGGACATACGGCGGCAAAACCTGCCCACCCGTCCGATAAACCGCCCAAACGGATGAGG
CAAACACCAGCAAAAGCCCAAAAACACTCAAACAGAAACCGCCCAACAGGTAATAGCGCA
AGCCGTTGCGGCTGCAAAACAGCCGTTTGTTCACAATACCGCTTCGATATTTTCCAGCGG
TCTGCCGACAGCCGCCTTACCGTTTGCCAAAACAATCGGACGCTCCAACAGGGCGGGATG
ATCGGCGATGGCACGCAGCAGCGCGTCATTGTCCAAATTGGGGTTGTCCAAACCCAATTC
CTTATACAAATCATCTTTCACGCGCATCATCCCGCGCGCCGATGCCAAGCCCAATTTGTT
GAAAATATCCTTCAATTCGGACAAGTCGGGCGGCGTATCCAAATATTTGACCACTTCGGC
AGCAATGCCGCGTTCTTCCAATAGGGACAAGGCGGCACGCGATTTGCTGCAACGCGGATT
GTGCAAAATTTTGATTTCAGGCATGACATTTCCTTGCTTCTCCACAATCCCCTTATTATC
GGCTTACACAGGGTTTTACTCAATATCCCGCCTACAACCGTACCAAACGGTTTACAATAC
CCGAATCGACATACAAAGGACAAAACGATGAAATACTTGAATCTTGCCGCAATCACCCTT
GCCGCCACATTTGCCGCACATACCGCCTCGGCAGACGAACTGGCCGGATGGAAAGACAAC
ACCCCGCAAAGCCTGCAATCGCTCAAAGCCCCCGTACCCATCGTCAACCTTTGGCCGACT
TGGTGCGGCCCGTGCCGAAAACAGATGCCTGCCATGTCCAAATGGTACAAAGCGCAGAAA
AAACGCAGCGTCGATATGGTCGGCATCGCGCTCGACACATCCCACAATATCCGCAACTTC

CTCAAACAAACTCCTGTTTCCTACCCGATTTGGCGTTACACCGGGGCGAACAGCCGAAAC
TTTATGAAAACCTACGGAAACACTGTCGGCGTACTGCCCTTTACCGTCGTCGAAGCACCG
AAATGCGGATACAGGCAGACCATTACCGGGGAGGTAAACGAAAAAAGCCTGACCGACGCC
GTCAAACTCGCCCATTCAAAATGCCGTTAAACGCCGGATGCCGTCTGAAGCCGCTTCAGA
TGGCATTTTTCTTTTCCACCCGCCTGCCGGTGCAAACTTATCCACTATCTAAAAACAGGC
GGAATCTTTATAATCGGCACTGTCTTACCTATTGTTCAGACGGCATATCCCTGCGGACGC
AACCGCCCGAAACGATATGCCGCCCTTCCTTACAGGACCTCCTATGATCCGTTTCGAACA
AGTTTCCAAAACCTATCCCGGCGGTTTTGAAGCCCTGAAAAACGTCAGCTTCCAAATCAA
CAAAGGCGAAATGATATTTATCGCGGGACACTCCGGTTCGGGCAAATCCACCATCCTCAA
ACTGATTTCGGGCATTACCAAGCCGAGCAGGGGCAAAATCCTGTTTAACGGGCAGGACCT
CGGCACATTGTCCGACAACCAAATCGGCTTTATGCGCCAACACATCGGCATCGTGTTCCA
AGACCACAAAATCCTCTACGACCGCAACGTCCTGCAAAACGTCATCCTGCCGCTTCGGAT
TATCGGCTATCCGCCGCGCAAAGCCGAAGAGCGTGCCCGCATCGCCATCGAAAAAGTCGG
CCTGAAAGGACGAGAATTGGACGATCCCGTAACCCTCTCCGGCGGTGAACAACAACGCCT
GTGCATCGCCCGCGCCGTCGTTCACCAGCCCGGCCTGCTGATTGCCGACGAACCCTCCGC
CAACCTCGACCGCGCCTACGCGCTCGATATTATGGAATTGTTCAAAACCTTCCACGAAGC
GGGAACTACCGTCATCGTTGCCGCACATGACGAAACCCTGATGGCGGACTACGGACACCG
CATCCTGCGCCTCTCGAAAGGACGACTCGCATGAGCATCATCCACTACCTCTCGCTGCAC
GTCGAATCCGCGCGCACCGCGCTCAAGCAGCTCCTGCGCCAACCCTTCGGCACACTGCTT
ACCCTCATGATGCTCGCCGTCGCGATGACCCTGCCGCTGTTTATGCATCTGGGCATCCAA
AGCGGGCAAAGCGTGTTGGGCAAACTCAACGAGTCGCCGCAAATCACAATCTATATGGAA
ACCTCCGCCGCACAAAGCGACAGCGATACCGTCCGCAGCCTGCTGGCGCGCGACAAACGG
CTCGACAACATCCGCTTCATCGGCAAAGAAGACGGTCTGGAAGAATTACAGTCCAATCTT
GACCAAAATCTGATTTCCATGCTTGACGGCAACCCCCTGCCGGATGTCTTTATCGTTACC
CCCGACCCGGCAACCACGCCCGCCCAAATGCAGGCAATCTACCGAGACATTACCAAACTG
CCTATGGTCGAATCCGCGTCTATGGATACCGAATGGGTGCAAACGCTGTACCAAATCAAC
GAGTTCATCCGCAAAATTTTGTGGTTTCTTTCCCTGACGCTGGGGATGGCGTTCGTCCTT
GTCGCACACAACACCATCCGCCTGCAAATCCTCAGCCGCAAAGAAGAAATCGAAATCACC
AAACTCTTGGGCGCGCCCGCGTCGTTTATCCGCCGCCCATTCCTTTATCAAGCCATGTGG
CAGAGCATCCTTTCCGCCGCCGTCAGCTTGGGGCTTTGCGGTTGGCTGCTCTCTGCCGTG
CGCCCATTGGTCGATGCCATTTTCAAACCCTACGGACTTAATATCGGCTGGCGGTTCTTC
TACGCTGGCGAACTCGGGCTGGTGTTCGGCTTCGTCATCGCGTTGGGCGTATTCGGCGCG
TGGCTTGCCACCACCCAGCACCTGCTCGGCTTCAAAGCCAAAAAATAAAACACCGTCAAA
AATGCCGTCCGAACCCGTTTTCAGACGGCATTTCAATTTGCCAGTATAATGGCGCATTTT
TCCAACAAGGAACCTACCATGCTGACCTCGGAACAAGTAAAAGCCATGATTGAAGGCGTG
GCAAAATGCGAACATATCGAAGTAGAAGGCGACGGACACCATTTTTTCGCCGTCATCGTT
TCATCAGAATTTGAAGGCAAGGCACGCCTCGCGCGCCACCGCCTGATTAAAGACGGACTC
AAAGCCCAACTGGAAAGTAACGAACTGCACGCACTTTCCATTTCGGTTGCCGCCACTCCG
GCGGAATGGGCAGCCAAAGCACAATAATCGCCACACAAAAATGCCGTCTGAAACCATTTC
GTTTCAGACGGCATTTTTTTATATCAAACCGCTTACGCGCCGCGTTTTTCCAAAGCGGC
TACGGCAGGCAGCTCTTTGCCTTCCAAGAACTCAAGGAACGCGCCGCCGCCGGTGGAGAT
GTAGCCGATTTGTTCGGTAACGCCGAATTTGGCAATCGCCGCCAGCGTGTCGCCGCCGCC
CGCAATCGAGAACGCTTTGCTTTGGGCAATGGCTTCGGCAAGGGCTTTCGTACCGCCTGC
GAATTGGTCAAACTCGAACACGCCGACCGGCCCGTTCCAAACGACCGTACCGGCGGCTTT
AAGCAAATCGGCAAGCGCGGCAGCGGATTTCGGACCGATGTCCAAAATCATCTCGTCTTC
GGCAACGTCGGCAATGTCTTTCACCACAGCTTCCGCATCGGCGGCAATGTCTTTCACCAC
AGCTTCCGCATCGGCGGCAAAGGCTTTGGCAACGACGACATCGGTCGGCAGCGGCACAGA
ACCGCCTTTTGCCGCCATTTTCGCCATAATTTTTTTGGATTCTTCCACCAAATCGTGTTC
CGCCAAAGATTTGCCGATGGCTTTGCCTTCCGCCAACAGGAAGGTGTTTGCGATACCGCC
GCCGACGATGAGTTGGTCGACTTTGTCCGCCAGCGATTCGAGGATGGTCAGCTTGGTGGA
CACTTTGCTGCCGGCAACGATGGCAACCATCGGGCGCGCGGGCTGTTTCAAGGCTTTGCC
CAAAGCGTCGAGTTCGCCCGCCATCAATACGCCGGCGCAGGCAACGGGCGCGGCTTGGGC
GACGGCTTCGGTCGAGGCTTGGGCGCGGTGGGCGGTTCCGAACGCGTCATTGACGAACAC
GTCGCACAAAGAAGCGTAGGCTTTACCCAGTTCCAAATCGTTTTTCTTCTCGCCTTTGTT
GATGCGCACGTTTTGCAGCATGACGACATCGCCCGCGTTCAGGGCGGGTTTGTTTTCACG
CCAGTCGTTCAATACTTTCACGTCTTTGCCCAACAGGCTGCCCAAGTGCGCGGCAACGGG
GGCGACATCGTCTTCGGGGTGGAACTCGCCTTCGGTCGGGCGGCCGAGATGGGTCATCAC
GATAACGGACGCACCGTTGTCCACGCAGTATTTAATGGACGCGAGCGAGGCGCGGATACG
GGTGTCGTCGCTGATTTTGCCGTCTTTGAACGGTACGTTCATATCGGCGCGGATGAGGAC
GGTTTTGCCCTGCACGTTTTGTTCGGTCAGTTTTAAAAATGCCATAATCAGTCCTTTTCA
ATCAGTGTTTGCGATACGGAAACAATTGATGCCGTCTGAAGGCTTCAGACGGCATCGCAA
CCCGATCAGCCGGATACGCGCTCGATTTTCGCGCCGACGCTGCCGAGTTTTTTTCAATA
TTTTCATAACCGCGATCCAAGTGGTAAATCTGTTCGACCACGGTTTCGCCTCGCGCCGCC
AAACCGGCGATAACGAGGCTGGCGGACGCACGCAAATCCGTCGCCTTGACGACTGCGCCG
GAAAGCTGTTCCACACCCTGCACAAATGCCGTATTGCCCTCGGTTGTGATGTTCGCCCCC
ATCCGGTTCAACTCGGGGACGTGCATAAAGCGGTTTTCAAAAATCGTTTCCACCACGCGG
CAGCTTCCCTCCGCCACGGCATTCAATGCCATAAACTGCGCCTGCATATCCGTGGGGAAG
CCGGGGTGGACGACCGTGCGGATGTCCACCGCCTTCGGACGCTGCCGCATATCGATGGCG
ATCCAATCGTCGCCCGCCTCAATCACCGCACCTGCCTCAACCAGTTTGTCCAACACCACT
TCCATCGTTTTCGGCGCGGCATTCCGCAAAACCACCCTGCCACCGGTTATCGCCACCGCG
CACAGGAACGTCCCCGCCTCGATCCGGTCGGGGACGACGCTGTGTTCGCAGCCTTGCAGC
TCGTCCACCCCTTCCACAATCATTGTGGACGTACCGATGCCGCTGATTTTCGCGCCCATT
TTGACCAGGCATTCCGCCAAATCGACCACTTCAGGCTCAATGGCGCAGTTTTCCAAAACC
GTCGTACCTTCCGCCAGCGTCGCCGCCATCAGCAGGTTTTCCGTGCCGCCGACGGTAACG
ACATCCATCGCCACGCGCGTACCTTTGAGTTTGCCTTTGGCTTTGACGTAACCGTGTTCG

ATAACAATCTCAGCACCCATCGCTTCCAAGCCTTTCAAATGCTGATCGACGGGGCGCGAA
CCGATGGCGCAGCCGCCCGGCAGGCTGACTTGCGCCTCGCCGAAACGCGCCAGCGTCGGG
CCCAGCACCAAAATCGAAGCGCGCATCGTTCGGACCAACTCGTAAGGGGCGCAGGTATTG
TTTACCGTACCGCCGTTGATTTCAAATTCGCTGATATTGTCGGTCAGGACGCGCGCGCCC
ATCCCCTGAAGCAGCTTTTGCGTGGTTTTCACATCTGCCAGCATAGGGACGTTTTTCAGG
CGCAACGTACCCGATGTCAGCAAACCCGCGCACATCAGCGGCAATGCCGCGTTTTTCGCG
CCCGAGACCGTTATTTCCCCGTTGAGCGGGCCGTTTGCGGAGATTTTCAGTTTGTCCACG
TTTGTTCTTTCCTGGTGGGTACTTGTATAGTGAATTAACAAAAATCGGGACAAGGCGGCG
AAGCCGCAGACAGTACAGATAGTACAGAACCGATTCACTTGGTGCTTCAGCACCTTAGAG
AATCGTTCTCTTTGAGCTAAGGCGAGGCAATACCGTACTGGTTTTTGTTAATCCACTATA
ATATTTCAATTCTCGGGACAACGCATAAAGCATCACCCGATGAAGGTTGCAGAGGCGGAA
TTATAAGGGATTTTCGGGAAAAATACGGAAGCCGCACCAAAGAATTTGACGAAATGCCGC
GCTTTCCGAACAAGGATTGTCGGAAGACAAAAAAGCCGAGTTTTGAAAACTCAGCTTTTT
TGCTTTATCTGGTGGGTCGTGAGCGATTCGAACGCTCGACCAACGGATTAAAAGTCCGCT
GCTCTACCGGCTGAGCTAACGACCCGATAAGTTTGGAATTTTACAGACCGGCCGAAACCC
TGTCAAGCCCCTTGCGGGCGGACGGGCGTTATATCCGCTTATCGGCCTGTTTTTTTCGTA
TAAACCAAAGAAGTCAACACCGATGCACCCAATGCGCCGAACACGACCGACAGCGAAACG
GAAATCGGGATATGCACCCAATGCATTACCAGCATTTTCACACCGATAAAACCCAACACG
AATGCCAATCCATATTTCAGGAAGATAAAGCGTTCCGCCACATCCGCCAGCAGGAAATAC
ATCGCCCGCAAGCCCAGAATTGCGAAAATATTGGAAGTCAGCACGATAAACGGATCGGTG
GTAACGGCAAAGACGGCGGGGATGCTGTCCACGGCAAACACGACATCGCTCAATTCAATC
ATGACCAGCACCAAAAACAGCGGCGTGGCGATTTTTTTGCCGTTTTCGACGGTAAAAAAT
TTCTCGCCGTGAAATTCCGTGCCGACCGGAACGACTTTCTTGACGGTATTCAGCAGCCTG
CTGTTTGCCAAATCCTCTTTCTCATCGCCTTCGGGCTTCATCATGTGTATACCAGTATAG
AGCAGGAACGCGCCAAACAGATACAGAATCCACTCAAACTGCTGAACCAGTGCCGCGCCG
ACGAAAATCATGACGGTGCGCAATACCAATGCGCCCAATACGCCGTACAGCAGCACGCGG
TGCTGAAACTGTGGTGCGACTTTGAAGTAGCCGAATATCATCAGGAACACGAAAATATTG
TCGACTGCCAACGATTTTTCCAAAATGTAGCCGGTAAAGAATTCCAATACTTTTTCTTTT
GCGACTGCCGCGCCGTAGCCGGGATTGCCGGCGAGTTCAAAATACAGCCAGCCCGCGAAC
AGGCAGGATACGGCAACCCACAAGCCGCTCCATGCCAAGGCTTCTTTGACGCCGACTTTA
TGGCTGCCGTTTTTCTTCAGCGAAAACATATCCAAGGCAATCATGACCAGCACTGCCGCA
AAAAAAACGCCGTAAAACAACGGCGACCCGATGCCGGGATATTCTGTCATGGTTCAATCT
CCTGATTTGAAATGTAATTGTGTTACCAGCTGATATAAAACATCGCTTTTGCCAAAAAGA
CAATCAGCAGCATATGGGTAAAGACGACGGCGTGTATGTATTTCGACCAACCGACCGTCA
GTGTGGAACGCGCCATTTTGACGACGGCGATGGCGAAGTGCGCCAATACGCTGAACGCCA
ACAGGATTTTCAGCGTCAGCATCGTACCGAAGGAAGTGGCAAACGGTTCGCCCAATATAG
AAAGATAGCGGTTTGCCGCCATCACGATGCCGCTGGCGAACAGCAGTCCGACCACAAACG
GCATCACCCTGACGGCGCGGTAAGACATTGCCTTTTCCACTTCGCGCCGCGCCTCGCGCG
ACACCCGTCCCGTATGCAGGACGGACAAAACCAGCACTTCAAAAAACACGCCGCCGACAA
AGGCAATAGCGCAATACAGATGAACGATGTGCGCGACGGCATAAATACTCATACGATGCT
CCAAACGGAAAACTCGGATACGGATTGTATCACTATCGCCCCCGATATCCGCATACCGCT
TCCCGCACCGCCTCGGCGATTCTCGCGCCCGCTCCGCGATGTTGTGCGATAAAGCCGTCC
ACGCGCGCCTGCATCTGCATCCCCCCCCCTCGGACGATAAGGTTTTTTCAACGGCTTCC
CGCCACGCATCCGCCGATTCGACTTGAACCGCCGCACCCGATGCCAAGGCGTGTCGGCAG
GCTTCGGAAAAATTGTAGGTTGAAAAGCCGAATATCGTCGGAACGCCGCAGGAAAGCGGT
TCGATGATGTTCTGACAACCCGAATCGACCAGACTGCCGCCGACAAAAGCGACATCGGCG
CACAGGTAATACGCATACAGCTCGCCCATACTGTCGCCTATCCACACCTGCGTATCAGGT
TCGACCGGCAAACCGTCGCTGCGCCGCTGAACCTTAAACCCGAAGCGTTTTGCCGTTTCA
AATACCGTCTGAAAATGCTCGGGATGGCGCGGCACGACGACCAGCAGCGCATCGCCGCGA
TATTGTTGCCACGCCGCCAGCAGTTTTTCCGCCTCGTCTTCACCCCGATAAACGCGCGTG
CTGCCGCACACGGCAACCGGCCGGCCTCCGATGCGTTTTTCAAACTGCCCCGCCAGCGTT
TTCATCTGTTCCGACGGTATGATGTCGTATTTGGTATTGCCGCACACCTGCACGGATGCC
GCGCCCAATTTCGCCAACCGCGCCGCATCCGCCTCTGTCTGCGCCAGACACCCCGTCAGC
GAAGCGGCGGCAGGACGGATCAGGCGGCGGACTTTCAGATAACCGTTCAACGATTTTTCC
GACAGCCGCGCATTCGCCAAAAACAGCGGCACACCCGCGCGCCGGCATTCCCTCATCAGG
TTGGGCCAGATTTCGGTTTCCATCAAAATGCCGAACATCGGGCGGTGTTCGCGCAAAAAC
TGCCGTACCCACGTTTTTTTGTCATACGGAAGATAGCGGCATTGCGCATCGGGAAACAGA
ACTTGCGCGGTTTCCCGCCCCGTCGGGGTCATCTGCGTCATCAGCAGCGGCGCATCGGGA
AAACGCCGCCGCAACTCGCGTATCAAGGACTGGGCGGCACGCGTTTCTCCGACCGAAACG
GCGTGTATCCAAACCGCGCCGGTAACGGGATTCGGATACGGCTTGCCGAAACGCTCGTCC
CGATGCGCCCGATATGCCGGGGCACTTCCGGAGCGTTTGTCCAAATAACGCCGTATCCAT
ATCGGCGCAAGCAGCCACAATACATCATAAAGCCATTGGAACATCTTTCTATTTCCTGCA
AAACAAATGCCGTCTGAACGGTTCAGACGGCATTTCGGCAACGGAATCAAATATCGTAGG
TTGTCGAAGCGGTATCTCCGCCCTTGCCCGTCCAGTTGGTATGGAAAAACTCACCGCGCG
GTTTGTCGGTGCGCTCGTAAGTGTGCGCGCCGAAGTAGTCGCGCTGTGCCTGCAAGAGGT
TGGCAGGCAGACGTTCGGTCGTGTAGCCGTCCAAGAACGTAATCGCCGAAGCCATGCAGG
GCATAGGGATGCCGCATTCGACCGCCTTGGCAACCACCTTGCGCCACGCCGGCAGGCAGT
TTTCCAAAATATTTTTGAAATACGGATCCGCACCCAAGAACACCAAATCGGGATTGTTTT
CATACGCGTCGCGGATATTGCTTAAGAATGCGCTGCGAATGATGCACCCCTCGCGCCACA
GCAGCGCAGTGTTGCCGTAGTCCAAATCCCAGCCGTAGCTTTCGCCCGCTTCGCGGATCA
GCATAAAGCCTTGTGCGTAGGAAATGATTTTAGATGCAAGCAGGGCCTGTCTCAACGCCT
CGACCCATTCTTGTTTGCCGCCTTCGACGGGCGTAACGGTTCGGGCGAACAGTTTGCCGG
TCTGCACGCGCTGTTCTTTGAACGACGAAACGCAGCGGGCGAATACGGCTTCGGAAATCA
GCGTCAGCGGAATACGCAAATCCAAAGCATTGATGCCCGTCCATTTGCCTGTACCTTTTT
GCCCTGCCGTATCGAGGATTTTCTCGACCAGCGGTTCGCCGCCTTCGTCCTTATAGCCCA

AAATTGCCGCTGTGATTTCAATCAGATAAGAATCCAGCTCGGTTTTGTTCCACTCGGCAA
ACACGCGGTACATTTCGTCGTAAGACAGCCCCAAGCCGTCTTTCATGAACTGGTACGCTT
CGCAAATCAACTGCATATCGCCATATTCGATGCCGTTATGCACCATTTTGACAAAATGCC
CCGCACCGTCTTTGCCGACCCAGTCGCAACACGGTTCGCCCTGCGACCTTTTGGCGGCAA
TCGCCTGAAAAATCGGCTTGACCGCATCCCAAGCGCGCTTATCCCCGCCCGGCATAATGG
ACGGCCCGCGCCGCGCCCCTTCTTCCCCGCCGGACACGCCCGCGCCGACAAACAAAATCC
CTTTTTCAGCAAGGTAATGTGTCCGCCGTGTCGTGTCGGGGTAATTGGCATTGCCGCCGT
CGATAAGGATGTCGCCTTCTTCCAACAGCGGAAGCAGTTGTTCGATAAATTCGTCAACCA
CCGAACCGGCACGAACCATCATCATAATTTTTCGCGGTTTTTCCAGCTTATCGACCAAAT
CTTGCAAAGAATACGCGCCGATAATATTAGTTCCTTTTGCCGCGCCGTTTAAAAATTCGT
CCACCTTGGCAGTCGTGCGGTTGTAGGCAACCACCTTAAATCCGCAATCGTTCATATTCA
AAATCAGGTTTTGCCCCATAACCGCCAAACCGATTACACCAATATCGCCGTTCATTGCAG
GAAGCTCCGTTATAGATTTAATTTATCGACCGCAACTCTACCCGATTTACACTTGTTTAA
CAATCCTTAACTTTTTAATTTTTTGAAAAGATGCCTTTACGCTTTGCTGTACCGTTTTGC
TGAAGGGTTATAAATAAAATATAAAATTTAAATAATAAAACGATGATTATATTGATAGGA
GAAATTTTCTGTGGGTAACTTTTTTTATTTTAAAAATCATCAGGATTTCTTTTTTTTAG
GGTGTCGGTAAGGCGGATTCCCTTTTGTGCATACCTGTGGATTGTTTTTCATGAAGAATA
GTTTTTGTGGACAGTTTGCTTGTTGTGCAAATGGCATCCTACTTTTCTTTACCGAATGGC
TGCCGATGTCTTTAAGAACCGGAATACTGTGGAGGTTTGAGAGGAAAGTGTGTTTGGAAC
TTGTGGAAATGGTCAGGTGTCGGCACGAATGTCTTATTTCTGCATATCGGCAGAGTGCGC
ATCCGAATTTGTGTATAAGTGGTGGAAAAAATGAGATTTGCGGGTAAATCTCACAATATT
TCAGTCAGATAACTTTGGATTGCTTGTGTATAAGTAAACTTTCGGATGGGGATACGTAAC
GGAAACCTGTACCGCGTCATTCCCACGAACCTACATTCCGTCATTCCCACGAAAGTGGGA
ATGATGAAATTTTGAGTTTTAGGAATTTATCGGGAGCAACAGAAACCGCTCCGCCGTCAT
TCCCGCGCAGGCGGGAATCTAGAACGTAAAATCTAAAGAAACCGTGTTGTAACGGCAGAC
CGATGCCGTCATTCCCGCGCAGGCGGGAATCTAGACCATTGGACAGCGGCAATATTCAAA
GATTATCTGAAAGTCCGAGATTCTGGATTCCCACTTTCGTGGGAATGACGGGATTTGAGA
TTGCGGCATTTATCGGAAAAAACAGAAACCGCTCCGCCGTCATTCCCGCGCAGGCGGGAA
TCCAGACCTTAGAACAACAGCAATATTCAAAGGTTATCTGAAAGTCCGAGATTCTGGATT
CCCACTTTCGTGGGAATGACGGGATTTTAGGTTTCTGATTTTGGTTTTCTGTTTTTGTGG
GAATGATGAAATTTTGAGTTTTAGGAATTTACCGGAAAAAACAGAAACCGCTCCGCCGTC
ATTCCCGCGCAGGCGGGAATCCAGACCTTAGAATAACAGCAATATTCAAAGATTATCTGA
AAGTCCGGGATTCTAGATTCCCACTTTCGTGGGAATGACGGCATCAGTCTGCCGTTTACA
GCACGGTTTCTTTAGATTTTACGTTCTAGATTCCCGCCTGCGCGGGAATGACGAATCCAT
CCATACGAAAACCTGCACCACGTCATTCCCACGAACCTACATCCCGTCATTCCCACAAAA
ACAGAAACCTCAAATCCCGTCATTCCCGCGCAGGCGGGAATCTAGACTTGTCGGTGCGGA
CGCTTATCGGATAAAACGGTTTCTTGAGATTCCGCGTCCTGGATTCCCACTTTCGCGGGA
ATGACGAATTTTAGGTTTCTGTTTTGGTTTTTTGTCCTTGTAGGAATGATGAAAATTTAA
GTTTTAGGAATTTACCGGAAAAAATAGAAAGCGTTATCCACAAGTTCTGATGTTCAGCTC
GTGAAATGCGTCGGGCAAATCATCGCTGTCGGCAAATTCCACCCGGTCGTAAGCCGTTTC
GTCTGCCAAAACCGCGCGCAAGAGTGCGTTGTTGATGGCGTGTCCCGATTTGTAGCCTTC
AAATGCGCCGACAATCGGATGTCCGACGATATACAAATCACCGATGGCATCAAGGATTTT
GTGGCGCACAAACTCATCGGGATAGCGCAAGCCTTCAGGATTCAGGACATCCGTGTCGTC
AATCACGATGGCGTTGTTCAAATTGCCGCCCAAACCCAGATTGTGGGCGCGCATCATTTC
CACTTCGTGCATAAAGCCGAAAGTGCGCGCGCGCGCGATTTCGTCGATGTAGGATTTGCC
GGCGAAATCGATTTCAAAAGTGGGCGAGCTGCGGTTGAAAACCGGATGGTCGAATTCGAT
GGTCAGCGTTACCTTAAAGCCGTCATACGGCGTAAAGCGCACCCATTTGCCCGCTTCTTT
GATTTCGACAGGCTTGAGGATTTTCAAAAAACGCTTTTGCGCCTTTTGATCGACCACGCC
CGCATCTTGCAAAAGGTAAATAAACGGCAGGCTGGAGCCGTCCATAATCGGGATTTCGGG
CGCGTTCAGCTCAATCAGCGCATTGTCGATGCCGTAGGCGGACAGCGCGGACATAATGTG
TTCGATCGTGCCGACGCGCACGCCTTTGTCGGTAACGATGGTGGAGGAAAGGCGGGTATC
GTTGATCAAATAAGGGGTCAGCTTGATTTGTTCGCCCATCTCGCCGTCCAAATCGGTACG
GCGGAAGGAAATCCCGCTGTTTTCAGGCGCGGGGTGCAGGGTCAGCGCGACGCGTTCGCC
CGAATGCAGCCCGACGCCGGTAACGCTGATGGATTTCGCCAAAGTTCTTTGCAGCATAAA
CCGCTTCCTTATCAAGGGGGTAAGTTTTGGAATAATACGATAAAACCGGAAAAACAGGCT
ATGTTTTTCCATAGTATTTGCCAATGTATCCGTTTTCAATACGTAAGCCGCATAAAAATG
TATAGTGGATTAACAAAAATCAAGACAAGGCGACGAACCCACCCCCCTCCTGAAAAACGC
AAAAAATGCCGTCCGAAAACCTTTCGGACGGCATTTTCGCGTAAACCGTCATTCCCACAA
GGACAAAAAACCAAAACAGAAAACCAAAAACAGCAACCTAAAATTCGTCATTCCCGCGCA
GGCGGGAATTTGGAATTTCAATGCCTCAAGAATTTATCGGAAAAAACCAAAACCCTTCCG
CCGTCATTCCCACGAAAGTGGGAATCTAGAAATGAAAAGCAGCAGGCATTTATCGGAAAT
GACCGAAACTGAACGGACTGGATTCCCGCTTTTGCGGGAATGACGGCGACAGGGTTGCTG
TTATAGTGGATGAACAAAAACCAGTACGGCGTTGCCTCGGCTTAGCTCAAAGAGAACGAT
TCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATTTGTACTGTCTGCGGCT
TCGTCGCCTTGTCCTGATTTTTGTTAATCCACTATATCTAGCCGAATTACTTTATTTTTT
GATACGTAACCGGCCGGTTGCCGTCATTCCCGCGCAGGCGGGAATCTAGACATTCAATGC
TAAGGCAATTTATCGGGAATGACTGAAACTCAAAAAGCTGGATTCCCACTTTCGTGGGAA
TGACGCGGTGCAGGTTTCCGTACGGATAGCTTCGTCATTCCCGAGTAGGCGGGAATCTAG
TCCGCTTGTTCGGTAAATGAGAGGGCGGATTGCGCGCCTGTCAGATAAACCACGTGTTTA
AACGGGCGGCAATGAGGTACGCGCAGAGCCTTGAAGCGCAATCGATATATTATTTTCAGC
CAAAACGGACGCCCCCGCTTGCCTTGCAAACCTTTAAAAAGGAAGCCACCCGGATTAATC
CGAGTGGCCGTGGAAAATCACTTACCGCTTGATTTATTTAAAATTTATGGTATAATTTAC
CTTAGCTGGCATCACTTGCGTCGCGGCAGGTTGACGGCAGGTGCTTGGTGTCAATCTTCT
TAGCGTTGGCGGCGGCGGCGGCGGTAACGTCGTCGTTGGCGGCTTTGGCTTTGTCGCGCG
TAACCGGCTGTCCGCAGAACCATTTTACCGAACCGTTTTGACGCTTGGCCCACAGGGAGA

GTTTTTTGCCTTTGATTTCGTTGTTTACGTTGCTTGAAGCCATTTGGGCGGTAACGACGC
CGTTTTTGACTTCAACGCTTTTAACATATTTGCCTTTGATTTCAGAGGAGGTTGCCACGC
CGGCAGAAGTGTTGTTGCCGGGCCATTCGCCGTGATTCAGGTAATACTCGGTAACGGCTG
ATTTTTGACCTTCGGCCAAAAGAATGGCTTCGGAAACTTGTGCGCGGGCTGTGTAGTCTT
GATAAGCAGGAAGGGCGACTGCCGCCAAAATGCCGACGATGGCAATCACAATCATCAGCT
CGATAAGGGTAAAACCTTTTTGAAGGGTGTTCATAAAATTACTCCTAATTGGAAAGGAAA
TGCCTCAAGCTTACGCCATCGGCATTATGCAATGTATTTGACCATCGGTATTTTGTTGCG
ATACCTGTGTATTATAAAGCAAGATTGGTACCAAGTTTGTATTTTGAGGTGAAAATTTAT
GCGTTTATCTCTATGTAATTGTTTTTATTTTACATTTTCTTTCGTTTGGCGTGGTTTGAG
TAATTAGGGGGTTGCCGTTTTTTGTCAGCAGTGTTGAAAATTGTCAGTTTTAGTGCCGAT
TTTCGGCACTTTTTTATTGGCGTGGGGTATCTCTATTGGCATGGGGCATCGGGTGTGTTG
ATTGGGTCGGAATTTGAGATTTTTGAATTTGCGCGGTAGCATAGGGTGGGTTGGGTGGGA
AATTTTAAATTTAATTTTTAAAAATTTCCGTTTTCTTGGAAAGTGATTGAAATCGGCGCG
TGGTGTTCCTGTGCAACCGGCAGTTGAATCATCGCGGCAGGTTTCCGTGCGGATGGCTTC
GTCATTCCCGCGCAGGCGGGAATCCAGCCTTGTTGGTACGGAAACTTATCGGGAAAACGG
TTTCTTGAGATTTTACGTTCTGGATTCCCACTTTCGCGGGAATGACGCGGTGCAGGTTTC
CGTATGGATAGCTTCGTCATTCCCGCGCAGGCGGGAATCCAGGTCTGTCGGCACGGAAAC
TTATCGGGTAAAAAGGTTTCTTGAGATTTTTCGTCCTGGATTCCCACTTTCGTGGGAATG
ACGGGATGTAGGTTCGTGGGAATGACGGTTTAGGTATTTTTATAGAAAGCCGTAGGTGGT
GTTTCTATGCAAACGACAGATGAATCATCGCGGCAGGTTGACGGCAGGTGCTTGGTGTCG
ATTTGTCGGTGCCGGTGGCGGCGGCGGTAACGGCGTCGTCTTTGGCGTTGTCGGCGCGC
GTAACCGGCAGTCCGCAGAACCATTTTACCGAACCGGCTTGACGCTTGGCCCACAGGGAG
AGTTTTTTGCCTTTGATTTCGTTGTTTACGTTGCTTGAAGCCATTTGGGCGGTAACGACG
CCGTTTTTGACTTCAACGCTTTTAACATATTTGCCTTTGATGTCGGCGGAGGTTGCCACG
CCGGCAGAACTGTTGTTGCCGGGCCATTCGCCGTGATTCAGGTAATACTCTGTGACGGCT
GATTTTTGACCTTCAGCCAAAAGAATGGCTTCGTCATTCCCGCGCAGGCGGGAATCTAGG
TCTGTCGGCACGGAAACTTATCGGGAAAACAGTTTCTTGAGATTTTGCGTTCTGGATTCC
CGCTTTCGCGGGAATGACGGGATTAAAGTTTCAAAATTTATTCTAAATAACTGAAATTCA
ACGAACTAGATTCCCACTTTCGTGGGAATGACGAATTTTAGGTTGCTGTTTTTGTGGGAA
TGATGAAATTTTAAGTTTTAGGAATTTATCGAAAAAACAGAAACCGCTCCGCCGTCATTC
CCGCGCAGGCGGGAATCCAGCCTCGTCGGTACGGAAACTTATCGGGTAAAAAGGTTTCTC
TAGTTTGGTGTCGATTTTCTTGTCGATGCTGTTGACGGCAGGTGCTTGGTGTCGATCTGC
TTGCCGTTGGCGGCGGTGTCGGCTTTGACGGCGTCGGCGCTGGCGTTGTCGCGCTTAACC
GGCTGTCCGTAGAACCATTTTACCGAACCGTCTTGACGCTTGGCCCACAGGGAGAGTTTT
TTGCCTTGGATTTCTTTGTTTACGCCGCTTGAAAGCATTGTGGCGGTAACGACGCCGTTT
TTGACTTCAACTTTCTCAACATATTTGCCTTTGATGTTGGCGGAGGTTGCCACGCCGGCA
GAACTGTTGTTGCCGGGCCATTCGCCGTGATTCAGGTAATACTCGGTGACGGCTGATTTT
TGACCTTCAGCCAAAAGAATGGCTTCGTCATTCCCGCGCAGGCGGGAATCTAGACCTTAG
AACAACAGCAATATTCAAAGATTATCTGAAAGTCCGGGATTCTAGATTCCCACTTTCGTG
GGAATGACGAATTTTAGGTTGCTGTTTTTGGTTTTCTGTTTTTGAGGGAATGATGAAATT
TTAAGTTTTAGGAATTTATCAGAAAAAACAGAAACCGCTCCGCCGTCATTCCCGCGCAGG
CGGGAATCCAGGTCTGTCGGTACGGAAACTTATCGGGTAAAACGGTTTCTCTAGTTTGGT
GTCGATTTTCTTGTCGGTGCTGTTGACGGCAGGTGCTTGGTGTTGATGTTGGCGGTGCCC
TTGCCGGTGGCGGCGGTGACGGCGTCGTCTTTGGCTTTGTCGCGCGTAACCGGCTGTCCG
CAGAACCATTTTACCGAACCGTTTTGACGCTTGGCCCACAGGGAGAGTTTTTTGCCTTTG
ATTTCGTTGTTTACGTTGCTTGAAGCCATTTGGGCGGTAACGACGCCGTTTTTGACTTCA
ACGCTTTTAACATATTTGCCTTTGATTTCAGAGGAGGTTGCCACGCCGGCAGAACTGTTG
TCGCCGGGCCATTCGCCGTGATTCAGGTAATACTCGGTAACGGCTGATTTTTGACCTTCG
ACCAAAAGGATAGCTTCGTCATTCCCGCGCAGGCGGGAATCCAGCCTTGTCGGTACGGAA
ACTTATCGGGTAAAACGGTTTCTTTAGATTTTGCGTTCTGGATTCCCACTTTCGTGGGAA
TGACGGGATTAAAGTTTCAAAATTTATTCTAAATAACTGAAACTCAACGAACTAGATTCC
CGCTTTTGCGGGAATGACGAATTTTAGGTTTCTGTTTTGGGTTTTCTGTTTTTGAGGGAA
TGATGAAATTTTAGGTTTCTGTTTTTGGTTTTCTGTCCTTGTGGGAATGATGAAATTTTA
AGTTTTAGGAATTTATCGGAAAAAACAGAAACCGCTCCGCCGTCATTCCCGCGCAGGCGG
GAATCCAGCCTCGTCGGTGCGGAAACTTATCGGGAAAACGGTTTCTTTAGATTTTACGTT
CTGGATTCCTACTTTCGTGGGAAAGACGAATTTTAGGTTTCTGTTTTTGGTTTTCTGTCC
TTGTGGGAATGATGAAAATTTAAGTTTTAGGAATTTATCGGAAAAAACAGAAACCGCTCT
GCCGTCATTCCCGCAAAAGCGGGAATCCAGCCTCGTCGGTGCGGAAACTTATCGGGTAAA
AAGGTTTCTTTAGTTTGGTGTCGATTTTGTCGGTGCCGGTGGCGGCGGCAACGTCGTCTT
TGGCGTTGTCGGCGCGCGTAACCGGCTGTCCGCAGAACCATTTTACCGAACCGGCTTGAC
GCTTGGCCCACAGGGAGAGTTTTTTGCCTTTGATTTCGTTGTTTACGCCGGTTGAAAGCA
TTGTGGCGGTAACGACGCCGTTTTTGACTTCAACTTCCTTAACATATTTGCCTTTGATTG
TTGAAGAAGATGCCACGCCGGCGGCATCATTAAATCCCGTCATTCCCACTTTCGTGGGAA
TGACGGGATTAAAGTTTCAAAATTTATTCTAAATAACTGAAACTCAACGAACTAGATTCC
CGCTTTTGCGGGAATGACGAATTTTAGGTTGCTGTTTTTGGTTTTCTGTCCTTGCGGGAA
TGATGAAATTTTAAGTTTTAGGAATTTATCGAAAAAACAGAAACCGCTCCGCCGTCATTC
CCGCGCAGGCGGGAATCCAGCCTCGTCGGTGCGGAAACTTATCGGGAAAACGGTTTCTTG
AGATTTTGCGTTCTGGATTCCCGCTTTCGTGGGAATGACGGTTTAGGTATTTTTATAGAA
AGCCGTAGGTGGTGTTTCTATGCAAACGACAGATGAAGCGTCGCGGCAGGTTGACGGCAG
GTGCTTGGTGTTGATGTTGTCGGCGGTCTTGGCGGCGGCGGCGACGGTGTCGGCTTTGGC
GTCGGTGCGCGTAACCGGCTGTCCGCAGAACCATTTTACCGAACCGTCTTGACGCTTGGC
CCACAGGGAGAGTTTTTTGCCTTGGATTTCTTTGTTTACGCCGCTTGAAAGCATTGTGGC
GGTAATGACGCCGTTTGCGACTGTAACTTCCTTAACATATTTGCCTTTGATTGTTGAAGA
AGATGCCACGCCGGCAGAAGTGTTGTTGCCGGGCCATTCGCCGTGATTCAGGTAATACTC
TGTGACGGCTGATTTTTGACCTTCGGCCAAAAGGATAGCTTCGTCATTCCCGCGCAGGCG

GGAATCCAGGTCTGTCGGTACGGAAACTTATCGGGTAAAACGGTTTCTTTAGATTTTGCG
TTCTGGATTCCCACTTTCGCGGGAATGACGGGATTAAAGTTTCAAAATTTATTCTAAATA
ACTGAAACCAACGAACTAGATTCCCACTTTTGCGGGAATGACGAAGTTTTTCTGCCATTT
GCCGTGATTCGGGCAATACTCGGTAACGGCTGATTTTTTGAAAGTGTTTGAAATCGGCGC
GTGGTGTTTCTATGCAACCGGTAGATGAATCATCGCGGCAGGTTGACGGCAGGTGCTTGG
TGTTGATTTTGTCGTCGGTCTTGCCGTTGGCGGCGGCGACGTCGGTGGCGGTGGCGGTGG
CGGTGTCGTTGCGCGTAACCGGCTGTCCGCAGAACCATTTGACCGAACCGTTTTGACGCT
TGGCCCACAGGGAGAGTTTTTTGCCTTTGATTTCTTTGTTTACGCCGCTTGAAAGCATTG
TGGCGGTAACGACGCCGTTTTTGACTTCAACTTTCTCAACATATTTGCCTTTGATGTCGG
AGGAGGATGCCACGCCGGCGGCATCATTAAATCCCGTCATTCCCGCAAAAGCGGGAATCT
AGAACTCAGGACCGGAGAAACCTTTTTACCCGATAAGTTTCCGTGCCGACAGACCTAGAT
TCCCGCCTGCGTGGGAATGATGGGATTAAAGTTTCAAAATTTATTCTAAATAACTGAAAC
TCAACGAACTAGATTCCCGCTTTTGCGGGAATGACGAATTTTAGGTTTCTGTTTGTGGGT
TTCTGTTCTTGTGGGAATGATGAAATTTTAAGTTTTAGGAATTTATCGGAAAAAAACAGAA
ACCGCTCCGCCGTCATTCCCGCGCAGGCGGGAATCCAGCCTTGTCGGTACGGAAACTTAT
CGGGTAAAAAGGTTTCTCTAGTTTGGTGTCGATTTTCTTGTCGGTGCTGTTGACGGCAGG
TGCTTGGTGTTGATTTTGTCGGTGTCGGGTGTGGCGGCGGTGACTTCGTCGGTGCCGGCT
TTGGCGTTGGCGGCGTTGCGCGTAACCGGCTGTCCGCAGAACCATTTTACCGAACCGTCT
TGACGCTTGGCCCACAGGGAGAGTTTTTTGCCTTGGATTTCTTTGTTTACGCCGCTTGAA
AGCATTGTGGCGGTAATGACGCCGTTTGCGACTGTAACTTCCTTAACATATTTGCCTTTG
ATTGTTGAAGAAGATGCCACGCCGGCAGAAGTGTTGTTTTTCGGCCATTCGCCGTGATTC
GGGTAATACTCGGGTGTTTTTGTGCAAACGGCAGATGCTGCGTCGCGGCAGGTTGACGGC
AGGTGCTTGGTGTTGGTTTTCTTGTTGCCGGTGTTGTCGGCGGCGACGGTGTCGTCGGTG
CCGGCGCGCGTAACCGGCTGTCCGCAGAACCATTTTACCGAACCGTTTTGACGCTTGGCC
CACAGGGAGAGTTTTTTGCCTTGGATTTCTTTGTTTACGCCGCTTGAAAGCATTGTGGCG
GTAACGACGCCGTTTGCGACTGTAACTTCCTTAACATATTTTCCTTTGATTTTAGAGGAG
GATGCCACGCCGGCGGCATCATTAAATCCCGTCATTCCCACGAAAGTGGGAATCTAGAAC
TCAGGACCGGAGAAACCTTTTTACCCGATAAGTTTCCGTGCCGACAGACCTGGATTCCCG
CCTGCGCGGGAATGACGAAGTTTTTCGGCCATTCGCCGTGATTCGGGCAATACTCGGGTG
TTTTGTGCAAACGGCAGATGCTGCGTCGCGGCAGGTTGACGGCAGGTGCTTGGTGTCAAT
CTTCTTACCGTTGGCGGCGGCGGCGGCGGTAACGTCGTCGTTGGCGGCTTTGGCGTTGTC
GCGCTCAACCGGCTGTCCGCAGAACCATTTTACCGAACCGGCTTGACGCTTGGCCCACAG
GGAGAGTTTTCTGCCTTTGATTTCTTTGTTTACGCCGCTTGAAGCCATTATGTCAGACGG
TATTGCCCGGGCAGCTTTATTCGTACACTTTCAGCAGCTCGACTTCAAATATCAAAGTGG
CGTGCGGGGGAATCACGCCGCCCGCGCCGTGTGCGCCGTAGCCCATTTCCGAAGGGATGG
TCAGCTTGCGTTTGCCGCCTTCCTTCATGCCGCCGAAGCCTTCGTCCCAGCCTTTGATGA
CTTGTCCGACACCGAGCGTGATGGTCAGCGGCTGGCGGCGGTCGAGGCTGGAGTCGAATT
TGGTTCCGTTTTCCAGCCAACCTGTGTAATGCACGGTAATCTCTTTGCCTTTAACTGCTT
CTTTTCCGAAGCCTTCTTGCAAGTCTTCAATAATCAGGCCGCCCATATTTGTCCTTTCGT
TGCTTGTTGGTCAAAACGGCAAGGGTAACATACCGTCCGTCGAAGTCAAATGCCGCTCAA
ACGTCAGCTGCATCGGTGCAGCTGAAACGGCTGTGTTTGTTTGACTGTTTTATTTTTTTC
GTAAAGGTTCCATGCTTTTTCATGGAAATAGAAAACGACGGTGTTGATTAGGGGTTCGAC
CAGCGCAACTGCTCCCGATACGCCTATACTGCCCGTCAGTACATAGGTTACACTGAAGGC
GACGCTGAAATGCAGTGCGGCAAAAGTCAGGGTTTTAAGCATCATCCTCTCCCGGATTGG
ACATTGACGGAGAGATGATAAAGATTATCATAAGGCTGCGCGGTTTAAATTTGCTATTTG
TTGTTAGTGTAGATAAATCGTTTTTTAAATAAGGATAGGAATTATGAATCATAAAAAGAT
CGTTGTTTTGGATGCGGATACTTTGCCCGGCCGGGTTTTTCATTTTGATTTTCCGCACGA
GCTTGCGGTTTACGGTACGACAGGTGCGGATGAAACGGCAGAACGGGTGCGCGATGCACA
TATTGTCATTACTAACAAAGTGATGATTTCTGCCGATATTATTGCGGCTAATCCGCAGTT
GGAGCTGATTGCCGTCAGTGCGACCGGCGTGAACAATGTCGATATTGGGGCGGCGAAGGC
GGCCGGTGTTGCGGTATGCAATGTCCGCGCATACGGAAACGAATCGGTTGCGGAACACGC
CTTTATGCTGATGATTGCGTTAATGCGGAATTTGCCTGCCTATCAGCGTGATGTTGCGGC
AGGATTGTGGGAAAAGTCGCCGTTTTTCTGCCATTACGGCGCGCCGATTCGGGATTTGAA
CGGCAAAACGCTGGCGGTTTTCGGACGCGGCAATATCGGACGGACGCTTGCCGGATACGC
GCAGGCATTCGGTATGGGGGTGGTGTTTGCCGAACACAAACACGCGTCCGCTGTGCGTGA
AGGCTATGTTTCCTTTGAAGATGCGGTACGGGCTGCTGATGTGTTGTCGCTGCACTGTCC
GCTAAACGCCCAAACTGAAAATATGATAGGCGAAAACGAATTGCGGCAGATGAAGCCTGG
CGCGGTTTTAATCAATTGTGGGCGCGGCGGGCTGGTGGATGAAAACGCGCTGCTTGCCGC
ACTCAAATACGGGCAGATCGGTGGGGCAGGTGTCGATGTTTTGACGAATGAGCCGCCCAA
AAACGGCAATCCCTTGCTGAATGCACGATTACCCAATCTGATTGTTACGCCGCATACCGC
GTGGGCAAGTCGTGAGGCTTTGGACAGGCTGTTTGATATATTGTTGGCGAACATTCACGC
CTTTGTGAAAGGAGAGGCGCAAAACCGCGTGGTTTGAACCTGTCGGGATTGCGGAAAAAA
ATGCCGTCTGAACGCCTCAAGGGTTCAGACGGCATTTCTTGAGATTCCCGTTTAACCGAC
TTTGTCGCCCGGCTGCGCGCCTGTATCCACATCCAAGAGCTTCAGTTTCCCGTCTGCCGT
GGCGGCACTCAAAATCATGCCTTCAGATACACCGAATTTTGCCATTTTGCGCGGGGCGAA
GTTGGCGACGGCGATGACCATGCGGCCGTTCAATTCGGCAGGGTTCGGGTAAGACGCGGC
GATGCCGGAGAAGATGATGCGTTTTTCAAAACCGAAATCGAGGTCGAATTTCAAAAGTTT
GGTGCTGCCTTCGACAGCTTCGCAGTTCAATACTTTGGCAACGCGCATGTCGATTTTCAT
AAAGTCGTCGAAACTCGCCTGTTCGGCGACTTTTTCGTATTTGCCCTCTTCGGCGGCAGG
TGCGGCTGCGGCGGCGATGCTTTGTTTGTTGGCTTCGATTAAATCGTCCACTTGTTTTTG
CTCCACTCGTTGCATTAAATGTTCGTATTTGTTGATGGCGTGTTTGCCCAAGGTATCGCG
TGTATTTGCCCAAGTGATGGCTTCCAAATTCAGGAATTTGGCGGCGTTTGCGGCGGTTTG
CGGCAAGACGGGGGCGAGGTAGGCGGTCAACATGGTGAAGGCGTTGATGAGTTCGCTGCA
TACTTCGTGCAGGCGTTCGTCTTGGCCTTCTTGTTTGGCGAGTTCCCACGGCTTGTTGGC
ATCAACGTATTCGTTGACAATGTCTGCCAAGGCCATGATGTCGCGCAGGGCTTTGGCGTA

TTCGCGGCTTTCGTAGCATTCGGCAATGGCTTCGCTTTGCGCAGTCAGTTTTGCCAGCAA
TTCGCTGTCGGCAACATCTTTCAGACGGCCTTCAAAGCGTTTGGCGATGAAACCTGAGGC
GCGGGCGGCGATGTTGACGTATTTGCCGACGAGGTCGCTGTTTACGCGGCTGATAAAGTC
TTGCAGGTTCAAATCGATGTCTTCGATTTTGCTGTTGAGTTTGGCGGCGATGTAGTAGCG
CATCCACTCGGGGTTCAGGCCTTGTTCCAGATAGGATTTGGCGGTAATAAACGTGCCGCG
CGATTTGGACATTTTTTGTCCGTCGACGGTCAAAAAGCCGTGTGCGTACACGCCGGTCGG
GGCGCGGTGGCCGGAGAAATGCAGCATAGCGGGCCAGAACAGGGCGTGGAAATAGAGAAT
ATCTTTGCCGATGAAGTGGTACATCTCGGTTTGGCTGTCGGCTTTGAAGTATTCGTCAAA
ATCGACGCCGATGCGGTCGCACAGGTTTTTAAACGACGCCATGTAGCCGACGGGCGCGTC
CAGCCAGACGTAGAAGTATTTGCCCGGCGCGTCGGGGATTTCAAAACCGAAATACGGCGC
GTCGCGGGAAATATCCCAGTCGGACAGGGTGGTTTCTTCACCTTCGCCCAGCCATTCTTT
CATTTTGTTGAGGGCTTCGGCTTGCAGATGGGGCTTGCCGTCGTGCGGGTTGTTGCCGGA
AGTCCATGCTTTGAGGAAGTCGGCGCATTCGCCCAGTTTGAAGAAGAAGTGTTCGGATTC
GCGCAATTCGGGTTTCGTACCGGAAACGGCGGAATACGGGTTAATCAGTTCGGTCGGGGA
ATAGGTCGTGCCGCAGACTTCGCAGTTGTCGCCGTATTGGTCTTGGGCGTGGCATTTCGG
GCATTCGCCTTTGACGAAGCGGTCGGGCAGGAACATTTGTTTTTCGGGGTCGAAAAGCTG
CTCGATGACGCGGCTCTCAATCTTGCCGTTGGCTTTCAGCGCGCGGTAAATGTCTTGGGA
AAACTGTTTGTTTTCAGGGGAATGGGTGCTGTAATAATTGTCGTAACCGATGAAAAAGCC
AGTAAAGTCGGCGAGGTGCTCTTCGCGCACTTTGGCAATCATGTCTTCGGGCGCGATACC
TTGTTTTTGCGCGGCAAGCATTACGGGCGTGCCGTGGGTGTCGTCGGCGCAGCAGTAGTG
GCACGCGTGGCCGCGCAGTTTTTGAAAGCGCACCCAAACGTCGGTTTGGATGTGTTCGAC
CATGTGGCCGAGGTGGATGCTGCCGTTGGCATAGGGCAGGGCGGAGGTAACTAAGATTTT
GCGTGTCATATTGTGCTTTGCAAACAATGGGTAAAGGCGGATTATACCGCAAATCAAACG
GGGAAATGCCGTCTGAAGCCTGAAAAATCGGGCTTCAGACGGCATTTTTGCCAACCGGCG
GGAGTTATTCGACGGTTACGGATTTCGCCAGGTTGCGCGGCTTGTCCACATCGGTACCGC
GTGCGAGGGCGGTGTGGTAGGCGAGGAGCTGCACGGGGATAGTATGCACGACGGGGGACA
GTTTGCCGACGTGGCGCGGTGCGCGGATAACGTGCACACCTTCGGTGGCATTAAAATTGC
TGTCGAGGTCGGCAAAGACGAAAAGTTCGCCGCCGCGCGCGCCGACTTCCTGCATATTGG
CTTTGACTTTGTCCAACAGGCTGTCGTTGGGTGCGATGACGACGACGGGCATATTTTCGT
CCACCAGGGCAAGCGGCCCGTGCTTCAGTTCGCCGGCAGGATAGGCTTCGGCGTGGATGT
AGGTGATTTCCTTCAGCTTCAACGCACCTTCGAGGGCAATCGGGTAATGGATGCCGCGCC
CTAAAAACAGCGCGCTGGTTTTCTTGGCAAACTGTTGCGCCCATGCGGCAATTTGAGGTT
CGAGGTTCAGAGCGTGCTGCACGCTGCCGGGAAGCTGGCGGAGTTCTTCGGTGTAACGCG
CTTCGTCTTCTTCGGAAACCAAACCGCGCACTTTCGCCAGCGTTACCGCCAAACCGAACA
GCGCAACCAGTTGCGTGGTAAACGCTTTGGTCGAGGCGACGCCGATTTCCGCACCGGCAC
GGGTATAAAGCACGAGGCTGCTTTCGCGCGGCAGGGCGGATTCCATCACGTTGCAAATGG
AGAGGCTGTGGCGGTGTCCCAAGGATTTGGCGTATTTCAACGCCTCCATCGTGTCCAGCG
TTTCGCCGGATTGGGAAATGGTAATGACCAGTTGGTCGGAATCAGCAATCACGCTGCGGT
ATCGGTATTCGCTGGCGATTTCGACGTCGGACGGGATTTTTGCGATGGATTCCAACCAAT
ATTTGGCGGTCAGCGCGGCGTAATAGGACGTGCCGCAGGCAAGGATTTTGACGCTGCGGA
TGCTTTCAAACACGCTTTTGGCATCTTTGCCGAAGTTTTCGGGGATGAAGCCGCCGTCGA
GGAAAACCTCCGCCGTGTCTGCAATCGCGCGGGGCTGCTCGTGGATTTCTTTTTGCATAA
AGTGGCTGTACAGTCCCAGTTCCAAAGAGGCGAGCGAGAGTTCGGATACCTTGACTTTGC
GTTCGGCAGGCAGGCCGTTTTTATCGGTCAGCCTTTTGATGCCGTCTGAAGCCAGCAGCG
CGATGTCGCCGTCTTCGAGGTACGCCACGCGGCGCGTAAAGGCGATGACGGCGGATACGT
CCGAAGCGATAAAGGTTTCATCGTCGCCCAAAGCGACCAAAAGCGGGCAGCCCATACGCG
CCACAACTAATTCATCAGGCTTGTCTTGGGCAATAACCGCGATGGCGTATGCGCCGTGGA
AACGTTTGACCGCTTCTTGTACCGCTTCAAACAGCCTGCCGCCGTTTTGCGCGTATTCGT
GATTGATGCTGTGTGCGATGACTTCGGTATCCGTTTGCGATTCAAAACGGTATCCCAAAC
CTTCCAAACGTTTGCGTTCGCTTTCAAAGTTTTCGATGATGCCGTTGTGTACGACCGCAA
TCATACCGCCGCTGATGTGCGGGTGGGCGTTCGGCTCAGTAACGCCGCCGTGTGTCGCCC
AACGCGTATGTCCGATGCCGATGCCGCCGCTGATGCCTTTTTCGCGTGCCGCGTCCTCCA
TAAGCTGCACGCGTCCGACGCGGCGCACACGTTTGATTTTGCCGTCGGTGTTGACGGCAA
TGCCTGATGAGTCATAACCCCGGTATTCGAGGCGTTTGAGACCGTCGGTCAGAAAATCGA
CGACGTTGTGATGGGCGCGGATGGCGCCGACGATACCGCACATAACTGTTCCTTAGTATC
CGGTTGAAAAAAAACAGGCGCGGACGGCTTCCGTGCCGCACCTTCCTCTTCGGATTATAA
ACCGCCTCCCGCGCCGGAAAACAGCAAAATGCCGTCTGAAGGCTTGGGCTTGCTCAAAAA
AAGGAGGGATTTCCCTGTTTATCCAGGATGGGCGTTCAGACGGCATTACCTGCTGCTGGT
TTATAGTTTTTGCAAATCAACATTGACAAGCTGAAAAAAAAAAACAATATACTCGCTCGG
TCTTAATGTTAACGGAGTATGGAAATGAAACAAATGCTTTTAGCCGTCGGCGTGGTGGCG
GTGTTGGCGGGCTGCGGCAAGGATGCCGGCGGTTACGAGGGTTATTGGCGCGAAAAGTCG
GACAAAAAAGAGGGTATGATTGCCGTCAAAAAAGAAAAAGGCAATTACTTCCTTAATAAA
ATCCACGTGGTTACAGGCAAGGAAGAGTCCTTGCTTTTGTCTGAAAAAGACGGCGCGCTT
TCGATAAACACAGGGATAGGGGAAATCCCGATCAAACTTTCCGACGACGGGAAAGAGCTG
TATGTCGAACGTAGGCAGTATGTCAAAACCGATGCGGCGATGAAGGACAAAATCATCGCC
CATCAGAAAAAGTGCGGACAAACAGCACAGGCATACCGCGACGCGCGAAATGCGTTGCCG
TCAAACCAGACGTATCAGCAGCATCTGGCGGCGATCGAGCAATTGAAACGGCGGTTTGAA
GCCGAGTTTGACGAATTGGAAAAAGAAATCAAATGCAACGGCAGAAGCCCGGCATTGTTG
CTTTAGTAGGGGACAACCGGGAGGATGCCGCCGTCCGAATCGGATGTGCGGTTTCTGTAC
CGGTACGGGCGGGCAGGAATGTCCGCCTTTTTTGTTCGGATGCGTTTGAATACCCGTTTG
ATTCCGACCGTTTGCAAGGGGTATTTCCGTTCGGGCGGAAATTATAGTGGATTAACAAAA
ACCAGTACGGCGTTGCCTCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTGCTCAAGCA
CCAAGTGAATCGGTTCCGTACTATTTGTACTGTCTGCGGCTTCGTCGCCTTGTCCTGATT
TAAATTTGATCCACTATAATTCCGTCAAATAAGAAAGGAATTTTGTGCCTGCGGTATCGC
AAAACTTCGCCTTAATGCGCCCGATTGCCTAGGGATGGGCTTCAGATGGCATTGTTTTCC

GGTTTACGGGCGGTATTCGGGCTTCATACCGTTGGGTAGGAGCTGCCAGACATATCCCGT
GGTTTTCTGTTTGCCGGCAAGTTCGCCGCCTTCGTCGCCGTATCCCCAAAAATAATCCAC
GCGCACCGCGCCTTTAATCGCGCTGCCGCTATCCTGCGCCATAATCACGCGGTTGAGGGC
TTTGCGGGTAACCGGATGGGCGGTGGCGACAAATAAGGGCGCACCCAAGGTAATGTAGTG
CCGGTCGACTGCGCCGGCATATTCCCCCATCAGCGGCGTGCCCAGTGCGCCGACAGGGCC
GTCATTGCTGCTTCCGGCAAGCTCGCGGAAAAAGATATAGCTGGGGTTTTGACCCAAAAC
TTCGGCGAGGCGTTGCGGATTTTGCCGCATATAAGACTTAATGCCCTGCATGGAGGTTTG
TCCGAGTTTGAGGTAGCCCTTATCCGCCATATAGCGTCCGATGGAAACGTAGGGATGTTC
GTTTTTGTCGGCATAGCCGATGCGGATGTATTTGCCGGACGGGGTTTTCAGACGCCCCGA
GCCTTGGATGTGCATAAAAAAAAGTTCGACAGGGTCTTCGGCGTAACCGAGTATCGGGGC
TTTGCCGTCAAGCGCGCCGCCGTTGATTTGGTTGCGCGTGTGGTAGGGGAGGAAGCGGCT
TCCTTCAAACCTGCCTTTGATTGCTGTTGTGCGCGCGGTGATGGGGAATCGGGAGAGGTC
GGCGGTATGTGTGCCGCCGGTATTGTCGATTGTGCCGCTGTTTTTTCCCGTCTGCCTGAT
GCGGACAAGGGCTTTTCCGCTCCGCAAACCGGCAGGCAGGGGGACGGAGATAAAATCGTC
GGGAATACCGTAAATCGCCAAGCGGGCTTGTGCCGTCCCCCTCTCGTCGCCCTTCAGCAC
CGGTTCGTAATAGCCGGTAACCGTACCGGCAAGGCTTCCGTTGCCTGCAACCTGCCACGG
CGTGAAATAGCGTTCAAAAAACTGTTTTGCCTGAAAGGAATGGACGGGGGTTTGAAAGGC
TTGGGCGCACACATCCTGCCAGCCTTGGCGGTTTTTCAAATTGGCGCAGCCGAGGCGGAA
GGATTGCAGGCTTTTGGCGAAATCCTGCGCCGCCCAGTGGGGCAGGGACAGGTGCGGTAC
AACGGTATAGACGGCCCCGCCGCCGCCCACCGTCGTTCCGGCGGGGTCGGGGATGCCGAC
CGGCCGGTCCGGGCCGTTGATGACGGATGTGTCGGGTTGCGGAAAGCTTTGGATGCTCTT
GCTTTGGCAGGCGCCGACGATGGCGGCGGCGATCCCGTACAGGGCCCCGCCGAATAGGTA
TTTTTTCATAATGGACAATGTTGCCGGCAGTAATAAGAAAGATGGTTTCGGGCGGCGTTG
CGGCAGCCGTGGAGAGGGGATTTTAACACAGGGCGCAGCTGCAGCCTGCGGAACTTTCCG
CCGCGCGGTACTGCAGATAAAAATAACTTGCATTTGTATTTACAAGCAATGAAAATATTC
CGATAATATATTATTCATCATCCTTGTTCGTTCGCGTTTATGCTGGTCGCTTTTTTAATT
ATGTTGCGCGAGGGTATTGAAGCCGCCCTCATTGTCGCCATCGTTGCCGGTTTTCTGAAA
CAGTCCGCACATTCCAAACTGATGCCTAAGGTCTGGTTCGGGGTCGTCCTTGCTTCTTTG
ATGTGTTTGGGGCTGGGGTACGGCATCCATTCGGCAACGGGCGAGATTCCCCAGAAGCAG
CAGGAGTTCGTCGTCGGCATTATCGGTTTGGTTGCCGTTGCCATGCTGACTTATATGATT
TTATGGATGAAAAAGGCGGCGCGTTCGATGAAGCGGCAGCTTCAGGATTCTGTGCAGGCG
GCTTTGAACCGTGGCAGCGGTCAAGGATGGGCCTTGCTCGGTATGGCGTTTCTTGCCGTG
GCGCGCGAAGGTCTGGAGAGTGTTTTTTTCCTGCTTGCCGTATTCAAACAGAGCCCGACG
TGCCAGATCCCGGCCGGCGCGCTAGCCCGGGTTTTGCCTGCCGCCCTGATTGGCGCGTTC
ATTTATCAGGGCGGGATGCGCCTGAATCTGGCGAAGTTTTTCCGTTGGACGGGGGCGTTT
CTGATTGTCGTTGCCGCCGGCCTGCTTGCCGGCTCGCTGCGCGCGCTGCATGAGGCAGGT
ATTTGGAACGCGCTTCAGGACATTGTGTTCGACTCATCAAAATATTTGCACGAAGACAGT
CCGTTGGGCGTGCTGCTCGGCGGATTTTTCGGCTATACCGACCATCCGACGCAGGGCGAG
ACCTTGGTTTGGCTGCTGTACCTTATTCCCGTCATAACTTGGTTTTTGTGCGGCAGCACC
CCGTCTGAAACTTTAACCCGTAAAGAGCAGCTGAAATGAGAAAATTCAATTTGACCGCAT
TGTCCGTGATGCTTGCCTTAGGTTTGACCGCGTCCCAGCCGCCGGACGCGCAGAAAGCTC
CGCCGGCAGCGTCCGGTGAGGCGCAAACCGCCAACGAGGGCGGTTCGGTCAGTATCGCCG
TCAACGACAATGCCTGCGAACCGATGGAACTGACCGTGCCGAGCGGACAGGTTGTGTTCA
ATATTAAAAACAACAGCGGCCGCAAGCTCGAATGGGAAATCCTGAAAGGCGTGATGGTGG
TGGACGAGCGCGAAAACATCGCCCCCGGACTTTCCGATAAAATGACCGTCACCCTGTTGC
CGGGCGAATACGAAATGACTTGCGGTCTTTTGACCAATCCGCGCGGCAAGCTGGTCGTAA
CCGACAGCGGCTTTAAAGACACCGCCAACGAAGCGGATTTGGAAAAACTGTCCCAACCGC
TCGCCGACTATAAAGCCTACGTTCAAGGCGAGGTTAAAGAGCTGGTGGCGAAAACCAAAA
CTTTTACCGAAGCCGTCAAAGCAGGCGACATTGAAAAGGCGAAATCCCTGTTTGCCGACA
CCCGCGTCCATTACGAACGCATCGAACCGATTGCCGAGCTTTTCAGCGAACTCGACCCCG
TCATCGATGCGCGTGAAGACGACTTCAAAGACGGCGCCAAAGATGCCGGATTTACCGGCT
TTCACCGTATCGAATACGCCCTTTGGGTGGAAAAAGACGTGTCCGGCGTGAAGGAAATTG
CAGCGAAACTGATGACCGATGTCGAAGCCCTGCAAAAAGAAATCGACGCATTGGCGTTTC
CTCCGGCCAAGGTGGTCCGCGGCGCGTCCGAACTGATTGAAGAAGTGGCGGGCAGTAAAA
TCAGCGGCGAAGAAGACCGGTACAGCCACACCGATTTGAGCGACTTCCAAGCCAATGTGG
ACGGATCTAAAAAAATCGTCGATTTGTTCCGTCCGCTGATCGAGGCCAAAAACAAAGCCT
TGTTGGAAAAAACCGATACCAACTTCAAACAGGTCAACGAAATTCTGGCGAAATACCGGA
CTAAAGACGGTTTTGAAACCTACGACAAGCTGCGCGAAGCCGACCGCAAAGCGTTACAGG
CCTCTATTAACGCGCTTCCCGAAGACCTTGCCCAACTTCGCCGCATACTCGGCTTGAAAT
AAGCCGCAAGCGTTCAGACGGTATTTGGCGGCAGATACCGTCTGAAGTTTTATAGTGGAT
TAACAAAAACCAGTACGGCATTGCCTCGCCTTGCCTTGCCGTACTATTTATACTGTCTGC
GGCTTCGTCGCCTTGTCCTGATTTTTGTTAATCCACTATATCCGCCATATATTGCAGGGC
GGGATTTCAACCTGCCGCTATCGGTTAATGGAAAAACGGCGTGCAGGGATACCCATCCTG
CTGCACGGATATTGAAGGAAACACCATGAGCAAAAAACAACCCGCACAACCGACCAGGCG
CACTCTTTTTAAAACCGCGATCCCAGCCGGAGCAGTCGGCCCAATCGGAGGTTATCTCGG
CGCCAAAAAACACGGCGAAACCCCCGAACGCACCGCCGAAAGCCAACACTCGCCCCAACC
CTATCCCTGCTACGGCGAACATCAGGCAGGCATCGTTACGCCGCAGCAGCCGTTTTCGAT
TATGTGCGCCTTCGACGTAACCGCGCAAAGTCCCAAGCAGCTGGAAAACCTGTTCCGCAC
GCTGACCGCCCGCATCGAGTTTCTCACCCAAGGCGGCGAATACCAAGACGGCGACGACAA
ACTTCCGCCAGCCGGCAGCGGCATTTTGGGCAAAGCCTTCAACCCCGACGGGTTGACCGT
TACCGTGGGGGTGGGCAGCAGCCTGTTTGACGGCCGGTTCGGACTCAAAGACAAAAAACC
GATTCATTTGCAGGAAATGCGCGACTTCTCCAACGATAAGCTGCAAAAAAGCTCGTGCGA
CGGCGATTTGAGCCTGCAAATCTGTGCCTTCACCCCCGAAACCTGCCAAGCCGCCCTGCG
CGACATCATCAAACACACCGTCCAAACCGCCGTTATCCGTTGGAGTATCGACGGGTGGCA
GCCCAAATCCGAACCCGGCGCGATGGCGGCGCGCAACCTGTTGGGCTTCAGGGACGGCAC

GGGCAACCCCAAAGTTTCCGATCCCAAAACTGCCGACGAGGTTTTGTGGACGGGGGTGGC
CGCCAACAGCCTCGACGAACCGGAGTGGGCGAAAAACGGCAGCTATCAGGCAGTCCGCCT
TATCCGCCACTTTGTCGAGTTTTGGGACAGGACGCCCCTTCAAGAGCAAACCGACATTTT
CGGGCGGCGCAAATACAGCGGTGCGCCCATGGACGGCAAAAAAGAAGCCGACCAACCGGA
TTTTGCCAAAGACCCCGAGGGTGATATCACGCCCAAAGACAGCCATATACCCCTGGCGAA
TCCGCGCGATCCCGAATTCCTCAAAAAACACCGCCTCTTCCGCCGCGCCTACAGCTATTC
GCGCGGACTCGCCTCAAGCGGACAGCTTGATGTCGGGCTGGTGTTCGTCTGCTATCAGGC
AAACCTTGCCGACGGATTCATCTTCGTGCAAAACCTCCTCAACGGCGAACCGCTGGAAGA
ATACATCAGCCCCTTCGGCGGCGGCTATTTCTTCGTCTTGCCCGGCGTGGAAAAAGGCGG
CTTTTTGGGGCAAGGGCTGCTGGGCGTATAAATCCGCCATATAAAAAACGCCGTCCGAAC
CTTGCCAAACGGCTTCGGACGGCCTTTCTTGTTTTTGGGCGGTCAGGCTTTTTTGACGAA
TTCGGATTTTAAATTCATCGCGCTGCCGTCGATTTTGCAGCCGATGTTGTGATCGCCTTC
TTGCAGCCGTATGCCTTTGACTTTTGTGCCTTGTTTGATCACCATCGAGCTGCCTTTTAC
CTTGAGGTCTTTGATGAGGATGACGGTATCGCCGTTTTGCAGCACTGCGCCGTTGGCATC
GCGCACTTGAGCCGCAAGGTCGGCGGCGGATTCGGTTTCATTCCATTCATGCGCGCATTC
GGGGCAGATGTATTGTCCGCCGTCTTCATAGGTGTATTCGGAGGCCCATTGCGGGCATGG
GGGTAATGACATGCTTTGCCGTCCTTATCGGATGTTTGTTTTGGGGTGCCCTCTGAAACC
TGAAACCGGCTTCAGACGGCATAGCTTTATTCTTTCTCTTTTTCAGGACGCACCCAGCCT
TCGATGACGGTTTGGCGGGCGCGGGCGAGGGCGAGTTTGTTGTCTTCGACATTGCGGGTA
ATCGTGCTGCCCGCGCCTCTGGTTACTTTGTTGCCGAGGGTAACGGGGGCGACTAGGACG
CAGTTTGAACCGATGCGCACTTCGTCGCCGATGACGGTTTTGTGTTTGTGCACGCCGTCG
TAGTTGGCAATAATCGTACCGGCCCCGAAGTTGGTTTTGCAGCCGACTTCGGCGTCGCCG
ATGTAGGTGAGGTGGTTGGCTTTGGTGCCTTTGCCGATGGCGGCGTTTTTGATTTCGACG
AAGTTGCCGACGTGTACCTCGTCTGCAAGGCCGGCTTGCGGACGCAGGCGGGCGTACGGC
CCGATTCGGTTGTTTTCGCCGACTTCGCAGCTTTCGAGGTGGGAGAAGGGGGCGATTTTG
CTGTTTGCGCCGATTTTGGCGTTTTTGATGACGCAGTTTGCGCCGATTTCGACGTTGTCG
CCGAGCTCGATGTCGCCTTCAAAGATACAGTTCACATCAATCACGACGTCTTGCCCGTGT
TTCAGACGGCCTCGTAAATCGAAACGTGCCGGATCGCGCAGGGTTACGCCTGCTTTGAGC
AATTCTTGCGCCTGTTCGGTTTGGAAGATGCGTTCGAGTTCGGTCAGCTGGAGTTTGTTG
TTCACGCCGGCGGCGAGCTGGGAGGCGCGCACTTGGACGGGATGAACTTTAATACCGTCC
GCAACGCCTTTGGCGATGAGGTCGGTCAGGTAGTATTCGCCTTGTGCATTGTTGCTGGAA
AGGCTGTTCAGCCAGTTTTCGAGTTTGGCGTTGGGCAGGACGAGGATGCCGGTATTGATT
TCTTTCACGGCTTTTTGGACGGCGTCGGCGTCTTTTTCTTCGACGATGGCGGTTACGCTG
CCGTTGCTGTCGCGGATGATACGCCCCAAGCCTGTCGGGTCGTTGGGAACGTCGGTCAAC
AGCCCGACTTCGTTGCCTGCGCCTTCGAGCAGGGTTTCGAGGGTTTCAACGTCAATTAAA
GCAACGTCGCCGTACAACACCAGCGTGCGGCCTTCGGCGGAAAGGTGGGGCAGGCCGGTT
TTGACGGCGTGGCCGGTACCGAGCTGTTCGGTTTGTTCAACCCAAACGACATCGCGTTTG
ACGGTGTCCAAGACTTGCTCTTTGCCGTGGCCGATGACGACGCAGATGTTTTGCGGATTC
AGTGCGGCTGCGGTGTCGATAACGCGCCCGACCATGGGCTTGCCGCCGATGCGGTGCAGC
ACTTTTGGCATTTTGGAATACATGCGCGTGCCTTTGCCGGCGGCGAGGATGACGATGTTT
AAAGTGTTTTGCGGCATGACGGTTTCCTGTGCAATGCCGTCTGAAGCGGCTTCAGACGGC
ATAGGGTAGGTTTATCGGTTTTGAAACTTTCCTTTTTGCCAGTGTTGGCCATGCTCTTCC
TCGGCGTTGTTGCCGGTTTGATTGGGTAACACGGCATGGCGTTCGGGACGGTATTGGTTG
TAGTTCATATTTTTCGAGTAGCTGCCGTCTTGGTAATAAACGGGCGTGCCCGCGGGATAT
TTTTGACGGACGGCGGTCTTGCCGTTGCCGTCTTGATAAGTTTCCCACGCGCAGCCCGAC
AAAAGGGCGGCGGCAGCGGTCAGGAAGAGGAAGGTTTTACGCATGGCTTTTCTTTCGTAT
TTTCGGGGGGTAGGGGGTATTGTAATGATTTTGGCCGTGTTCTGACAAAGTTTCTGCATA
CCGAGCCAGTTGCGCCATATCCCTTACGGAGGCATCCATAAAGGGCAGCGCGTGCGATTT
TGCACCGAACCCGACGGTTTTCATACCCAGCGCCTTTGCCTGATCCAGGTTGTCCCCGCT
CTCGTCCACCATAATGCAGCATTCGGGCGGTACGTCCAACAGGCGGCAGACATTGAGATA
CGCTTGCGGATTGGGTTTGTACAGCAGCCCGAAATCATCCGTGCCGAAAAGCGCGTCGAA
ACGGTTTTCCAAACCGAGTGCGTTGACAACGGCACGGACGTAAAACGACGGGCCGTTGGA
AAAAACCGCCTTGCGCCCTTTTAGGCGGCTCAGGGTCTTTTGTGTTTCAGGCATCCCGTC
CAGCCTGGTCAGGATTGCATCGATCGGATGGCTTTCGCGCAAAAATTCGGCGATGTCGAT
TTCGGGATGGTGGATTTCCAGTCCGGCGAGCGTTGCGCCGTAGCGGTGCCAATACTCTTG
ACGCAGGTCGGACGCGGCAGATTCGGAGAGTTTGAGGCGGCGTGCCATATAGCGTGTCAT
AGCGCGGTTGATGAGTGTGAAGATGCCTGCGTCGGCATCGTGCAGCGTGTTGTCGAGGTC
GAACAGCCACACGGTCGGGTTTTCTTGCATGTTGAACCGTGAAAATTTGTTAGAATGTTA
TTTTACAGCGAATAGAGGAGGACTCGGAATGAAACGGAAAATTTGGCTGCTGCCGCTGCT
GGCGGTTTCGGCATACCTGCACGCGCACACCGAAGTCAGGCTGGCGGTGCATAAGTCGTT
CAGCCTGCCCAAAGGGTTGATTGCGCCCTTCGAGCGGGCAAACGATGCGAAGGTGTCGAT
TATTCAGGCGGGCGGCGCGAACGAAATGCTCAACAAACTGATTTTGAGCCGCGCCAACCC
GATTGCCGACGCGGTGTATGGTTTGGACAACGCCAATATCGGCAAGGCGCGGGAAATGGC
CATTTTGGCGGCGGCGCAACCCGAATCCGCCCCCGTCGCGGTCGGGCTGCCTTCGGCTTT
GGCGGTCGATTACGGCTATGTGTCCATCAATTACGACAAAAAATGGTTTGAAGGCAAAAA
GCTGCCCCTGCCGCAAACCCTGCAGGATTTGACCCGCCCCGAATATAAAAACCTATTGGT
CGTGCCGTCCCCCCCCACCTCGTCCCCCGGCCTGGCCTTCCTGATGGCGAACATCAGCGG
TCTGGGCGAAGAAAGCGCGTTCAAATGGTGGGCACAGATGCGGCAGAACGGCGTGAAGGT
CGCCAAAGGCTGGAGCGAGGCGTATTACACCGACTTTTCGCACAACGGCGGCGCGTATCC
GCTGGTGGTCGGTTATGCCGCCAGCCCGGCGGCGGAAGTGTATTTTTCCAAAGGCAAATA
CAGCGAGCCGCCGACGGGCAACCTGTTTTTAAAAGGCGGCGTATTCCGCCAGGTCGAAGG
CGCGGCGGTCTTGAAGGGCGCGAAACAGCCGGAATTGGCGGCAAAACTGGTGCAATGGCT
GCAAAGTCGGGAAGTGCAGCAGGCGGTTCCGTCCGAAATGTGGGTTTACCCCGCCCTCAA
AAACACGCGCCTGCCCGACGTGTTCCGCTTCGCCCAAGCCCCGACGCACACCACCGCCCC
CGCGCAGCGCGATATTGATGCGAACCAGCGCGGATGGGTTTCCCCTTGGATTAGAACGGT

TTTGAAATAAAACAAACATACCTCCCCGCAGGGCTTCATACGGCATTTTTACACCTGTGC
CGATTACGCCGCACGGGGCGGATGTTCGATCAAGAGGAAAACAATGGACTTCAAACAATT
TGATTTTTTACACCTGATCAGTGTTTCCGGTTGGAGCATCTGGCTGAAAAGGCGTGGGC
GTTCGGGCTGAACCTTGCCGCCGCGCTGCTTATTTTTTTGGTCGGAAAATGGGCGGCGAA
ACGCATTGTCGCTGTGATGAGGGCGGCGATGACGCGCGCGCAGGTCGATGCCACGCTGAT
TAGTTTTTTGTGTAATGTTGCCAATATCGGCTTATTGATTTTGGTGATTATTGCCGCATT
GGGCAGATTGGGCGTTTCCACAACATCCGTAACCGCCTTAATCGGCGGCGCGGGTTTGGC
GGTGGCGTTGTCCCTGAAAGACCAGCTGTCCAATTTTGCCGCCGGCGCACTGATTATCCT
GTTCCGCCCGTTCAAAGTCGGCGATTTTATCCGCGTCGGCGGTTTTGAAGGATATGTCCG
AGAGATTAAAATGGTGCAGACTTCTTTGCGGACGACCGACAACGAAGAAGTCGTGCTGCC
CAACAGCGTGGTGATGGGCAACAGCATCGTCAACCGTTCCACACTGCCGCTGTGCCGCGC
CCAAGTGATAGTCGGCGTCGATTACAACTGCGATTTGAAAGTGGCGAAAGAGGCGGTGTT
GAAAGCCGCCGTCGAACACCCCTTGAGCGTTCAAAACGAAGAGCGGCAGGCTGCCGCCTA
CATCACCGCCTTGGGCGACAATGCCATCGAAATCACATTATGGGCTTGGGCAAACGAAGC
AGACCGCTGGACGCTGCAATGCGACTTGAACGAACAAGTGGTCGAAAACCTCCGCAAAGT
CAATATCAACATCCCGTTCCCGCAACGCGACATACACATCATCAATTCTTAAACGCCGTC
TGAAAGAGCAGTGGGAAATGGACGCGCTGCACACCATCGCCCGAAACCTGACGAAAAAAC
GTCAAACCGTAAGCTGTGCCGAATCCTGTACGGGCGGAATGCTTGCCGCCGCATTCACAA
GCGTTGCAGGCAGTTCGCAATGGTTCGACCAGAGTTTTGTAACATACAGCAACAAAGCCA
AAGAAGACCGCTTGGGCGTGTTGCCCGAAACCCTGCTCGAACACGGCGCGGTCAGCCGCC
AAACCGTCTATGAGATGGCGCGCGGCGCGAAAGCCGTGGCGCAGGCGGATTACGCCGTCG
GTATTTCCGGCATCGCCGGTCCGGGCGGCGGCACCGAAAGCAAACCCGTCGGCACGGTTT
GGTTCGGGTTTGCCTTTCCGGGCGGAAGTTGCGAAGCAATGCGCCGTTTTGACGGCAACC
GCGAATCCGTCCGCGCGCAGGCGGTCGCCTTCGCGTTGGAACGGTTGGCGGGGCTGATTG
AAAACGGCGGCGATGCTGTCTAAACAAAATCTCCGTCTGAACAAAATCCCCATCGGATAA
AAAATGCCGTCTGAAACGTTTCGGGTTTCAGACGGCATTTTGTCGGGGTAGGCGGCGGTG
CGGCTTATTTCACTTTACCTTTCAACGCGCCATAGCCTGCCGCGTCCATTTGTTCCAGCG
GGATGAATTTCAAGCTCGCGCCGTTGATGCAGTAGCGCAGTCCGCCTTTGTCGCGCGGGC
CGTCGGGGAAGACGTGTCCCAAATGCGAGTCGGCGGCGTGGCTGCGCACTTCGGTGCGGC
GCATGTTGTAGCTGAAATCATCGTGTTCGGTAACGGATTTTGCATCAATCGGGCGCGTGA
AGCTCGGCCAGCCGCAGCCGGAATCATATTTGTCGGCGGAGCTGAACAAAGGTTCGCCGC
TGACAACGTCCACATAAATGCCGGGTTTGAACAAATGGTCGTATTCGTGGCTGAAGGCAT
ATTCGGTCGCGCTGTTTTGGGTAACTTGGTATTGCTCTTCGGTCAGGGTGCGTTTGAGTT
CGGCGTCACTCGGTTTTTTATACGTTGCCGCGTCGAAGCCTTTGCCTTGCGGGGCGGTCT
TGGTTTTGCCCGGCAGCGGTTCGTCAGCTTTGCGGATGTCGATGTGGCAGTAGCCGTTGG
GGTTTTTAATCAAGTAGTCCTGATGGTATTCCTCGGCATCGTAGAAGTTTTTCAGCGGCT
CGTTTTCAACAACGAGGGGCAGTTGGTATTTTTGCTGCTCGCGTTTGAGGGCGGCGGCGA
TGACGGCTTTTTCGGCGGGGTCGGTGTAGTACACGCCGCTGCGGTATTGCGTACCGGTGT
CGTTGCCCTGTTTGTTGAGGCTGGTCGGATCAACGACGCGGAAGAAATATTGCAGGATGT
CGTCTAGGCTGAGTTTGTCGGCATCGTAGGTCACTTTGACGGTTTCGGCGTGGCCCGTAT
GGCGGTAGGACACGTCTTCATAGCTCGGATTTTTCGTGTTGCCGTTGGCGTAGCCGGATA
CCGCGTCAACCACGCCGTCGATGCGTTGGAAATAGGCTTCCAAGCCCCAGAAGCAGCCGC
CGGCGAGGTAAATGGTGCGCGTGTTCATGATTTTTGAATCCTTTTTCTGAGTGTCGGGTT
TGTAGAACGAATGTTTCAAGCTGCCCAAATCGGCATTCGGGTCGCGGATTAACGCCAACG
CCTGCGCTTCGTTGATGCTGCCTTTGACGATGCGCTGCACGTCGCTGTCTTTACCGATTA
ACGCCCACGAGGGGTAAACGCTGATATTCAGGCTTTGGGCGATCGTGCCGCCGTTGTCGG
TTACGACGGGCAGCTTGGGATAATTCAAACCGGCATACCATTTTTGGAAGTCGCCGTCTT
TTTTCTCGTGCAAAAAGCCCGGGGAGGCGACGGTAATCAGGTTGGCGGAGCTGAATTTTG
CATCTTGCGCCCATTTTTCGGTCTGTCCCAATTCGGACAGACACAAAGGACACCAGCTCG
CCCAAAATTTAATCAGCGTCGGTTTGTCTTTTTTCAAGTAAACACTGGCGGGGCGGTTGT
CCGCAGTTTTCAAAGTGGATAAAGTGTGCGGCACGGTCGCGGCTCCGGCATCGACGATTT
TGGGCGAACAAGCACCCAGCGCAAGCAGGCAGCCGAACTTGGCGCAAAGGGAAAAGAAAG
TACGGTGTTTCATTTTGATGTTTCCTGTGTGGACGGTTTGCATGATTAGACGTTTGAGAT
GCCGAAACCTTACAGCCCGGATTTTCAGACAACCTTACCGCGTAAAATACGCTACAATAC
GCCCTGTTTCAAGTTTCTAAAATTAAAAGGAAAATTCAATGTTCAGCTTCTTCCGTCGCA
AGAAAAAACAGGAAACGCCGGCTCTCGAGGAGGCTCAAATTCAGGAAACCGCAGCAAAAG
CAGAATCTGAACTTGCTCAAATAGTTGAAAATATTAAAGAAGATGCTGAATCTTTAGCAG
AAAGCGTCAAAGGGCAGGTCGAATCTGCCGTTGAAACCGTCAGCGGTGCGGTTGAACAGG
TAAAGGAAACCGTTGCCGAGATGCTGTCTGAAGCAGAGGAAGCGGCGGAAAAAGCAGCGG
AACAAGTCGAAGCGGCAAAAGAAGCCGTTGCCGAAACCGTCGGCGAGGCTGTCGGGCAAG
TTCAAGAAGCCGTTGCGACAACTGAAGAACACAAGCTCGGTTGGGCGGCGCGTTTGAAAC
AAGGCCTGACCAAATCGCGCGACAAAATGGCGAAATCGCTGGCGGGCGTGTTCGGCGGCG
GACAAATCGACGAAGATTTATACGAAGAGCTGGAAACCGTGCTGATTACCAGCGATATGG
GCATGGAAGCCACCGAATACCTGATGAAAGACGTGCGCGACCGCGTCAGCCTCAAAGGGC
TGAAAGACGGCAACGAATTGCGCGGCGCGTTGAAAGAAGCCTTGTACGACCTGATTAAGC
CTCTGGAGAAACCTTTGGTTTTGCCCGAAACCAAAGAGCCGTTTGTCATCATGCTTGCCG
GCATCAACGGCGCGGGCAAAACCACGTCTATCGGTAAACTCGCCAAATATTTCCAAGCGC
AGGGCAAATCCGTATTGCTGGCGGCAGGCGATACTTTCCGTGCCGCCGCGCGTGAGCAGC
TTCAAGCTTGGGGCGAGCGCAACAACGTAACCGTGATTTCGCAAACCACGGGCGATTCCG
CCGCCGTGTGCTTCGATGCCGTCCAAGCCGCCAAAGCGCGCGGCATCGACATTGTGCTGG
CCGACACCGCCGGCCGCCTGCCCACGCAGCTTCATTTGATGGAAGAAATCAAAAAAGTGA
AACGCGTGCTGCAAAAAGCCATGCCCGACGCGCCGCACGAAATCATCGTCGTGCTTGATG
CCAATATCGGGCAAAACGCCGTCAACCAAGTCAAAGCCTTTGACGACGCATTGGGGCTGA
CCGGTTTAATCGTTACCAAACTCGACGGCACGGCAAAAGGCGGCATCCTCGCCGCGCTTG
CCTCCGACCGCCCCGTTCCCGTCCGCTATATCGGCGTGGGCGAAGGCATAGACGACCTGC

GCCCGTTTGACGCGCGCGCGTTTGTGGACGCACTGCTGGATTGAGCCGAAATGCCGTCCG
AAAACAGCAGACCGATGCCGTCATTCCCGCGCAGGCGGGAATCCAGACCTTGGGATAACG
GCAATATTCAAAGGTTATCTGAAAGTCCGAGATTCTGGATTCCCACTTTCGTGGGAATGA
CGGGATGTAGGTTCGTGGGAATGACGTGGTGCAGGTTTCCGTATGGATGGATTCGTCATT
CCCGCGCAGGCGGGAATCTAGAACGTAAAATCTAAAGAAACCGTGTTGTAACGGCAGACC
GATGCCGTCATTCCCGCGCAGGCGGGAATCTAGACCATTGGACAGCGGCAATATTCAAAG
ATTATCTGAAAGTCCGAGATTCTGGATTCCCACTTTCGTGGGAATGACGGGATTTGAGAT
TGCGGCATTTATCGGAAAAAACAGAAACCGCTCCGCCGTCATTCCCGCGCAGGCGGGAAT
CTAGGTTTGTCGGTGCGGAAACTTATCGGGTAAAACGGTTTCTTTAGATTTTGCGTTCTA
GATTCCCACTTTCGCGGGAATGACGAAGAGTTGCGGGAATGATGGAAAGCTATGGGAATA
ACGAAGGGTTAAAGTAATCACGGGATGGTGTTCGCGGGAATATAAATTGAAATAATTCAA
AAGGGTATTATATGCAGCCTGCGGTTTATATTTTAGCAAGCCAACGTAATGGCACGTTAT
ACATTGGCGTTACATCTGATTTGGTGCAACGTATTTACCAACATAGGGAGCATTTGATTG
AGGGATTTACATCACGGTACAACGTTACTATGCTGGTTTGGTATGAACTGCATCCTACGA
TGGAGAGTGCAATTACTCGGGAAAAACAGTTGAAGAAATGGAACAGGGCTTGGAAATTGC
AACTGATTGAAGAAAATAATGTTTCTTGGCAGGATTTATGGTTTGATATTATTTAGCCCG
TCATTCCCGCGCAGGCGGGAATCCGGCTTGTTCGGTTTCGGTTTTTTTTTGAGGTTTCG
GGCAACTTCTAAACCGTCATTCCCGCGTAGGCGGGAATCTAGACCTTGGGATAACGGCAA
TATTCAAAGTTTATAAAAGACCCGTTATTCCCGCGCAGGCGGGAATCTAGACCTTAGAAC
AACAGTAATATTCAAAGGTTAGCTGAAGCTTTAGAGATTCTAGATTCCCACTTTCGTGGG
AATGACGGGATGTAGGTTCGCGGGAATGACGGGATTTGAGATTGCGGCATTTATCGGAAA
AAACAGAAACCGTTCTGCCGTCATTCCCGCGCAGGCGGGAATCCGGCTTGTTCGGTTTCG
GTTTTTTTGAGGTTTCGGGCAACTTCTAAACCGTCATTCCCGCGCAGGCGGGAATCTAGA
CCATTGGACAGCGGCAATATTCAAAGATTATCTGAAAGTCCGAGATTCTAGATTCCCACT
TTCGTGGGAATGACGGGATGTAGGTTCGTGGGAATGACGGGATTTGAGATTGCGGCATTT
ATCGGAAAAAACAGAAACCGCTCTGCCGTCATTCCCGCGCAGGCGGGAATCCGGCTTGTT
CGGTTTCGGTTTTTTTTTTTTTTGAGGTTTCGGGCAACTTCTAAACCGTCATTCCCGCGC
AGGCGGGAATCCAGACCATTGGACAGCAGCAATATTCAAAGATTATCTGAAAGTCCGGGA
TTCTAGATTCCCACTTTCGTGGGAATGACGGGATGTAGGTTCGTGGGAATGACGGGATTT
GAGATTGCGGCATTTATCGGAAAAACAGCAACCGCTCCGCCGTCATTCCCGCGCAGGCGG
GAATCTAGACCTTGGGATAACAGCAATATTCAAAGGTTAGCTGAAGCTTTAGAGATTCTG
GATTCCCACTTTCGTGGGAATGACGGAATGTAGGTTCGTGGGAATGACGGGATTTGAGAT
TGCGGCATTTATCGGAAAAACAGCAACCGCTCCGCCGTCATTCCCGCGCAGGCGGGAATC
TAGACCTTGGGATAACAGCAATATTCAAAGGTTAGCTGAAGCTTTAGAGATTCTGGATTC
CCACTTTCGTGGGAATGACGGAATGTAGGTTCGTGGGAATGACGGGATTAGAGTTTCAAA
ATTTATTCTAAATAGCTGAAACTCAACGCACTGGATTCCCGCCTGCGCGGGAATGACGAA
TTTTAGGTTTCTGATTTTGGTTTTCTGTTTTTGAGGGAATGACGGGATTTGAGATTGCGG
CATTTATCGGGAGCAACAGAAACCGCTCCGCCGTCATTCCCGCGCAGGCGGGAATCTAGA
CCTTAGAACAACAGCAATATTCAAAGGTTAGCTGAAGCTTTAGAGATTCTAGATTCCCAC
TTTCGTGGGAATGACGGAATGTAGGTTCGTGGGAATGACGCGGTGCAGGTTTCCGTATGG
ATGGGTTCGTCATTCCCGCGCAGGCGGGAATCCGGCTTGTTCGGTTTCGGTTTTTTTTTT
TTGAGGTTTCGGGCAACTTCTAAACCGTCATTCCCGCGCAGGCGGGAATCTAGACCTTAG
AACAACAGCAATATTCAAAGATTATAAAAGACCTGTCATTCCCGCGCAGGCGGGAATCTA
GGTCTGTCGGCACGGAAACTTATCGGGTAAACGGTTTCTTGAGATTCCGCGTCCTGGATT
CCCACTTTCGTGGGAATGACGGGATGTAGGTTCGTGGGAATGACGCGGTGCAGGTTTCCG
TATGGATGGGTTCGTCATTCCCGCGCAGGCGGGAATCTAGACCTTAGAATAACAGCAATA
TTCAAAGATTATCTGAAAGTCCGAGATTCTGGATTCCCACTTTCGTGGGAATGACGGAAT
GTAGGTTCGCGGGAATGACGCGGTGCAGGTTTCCGTGAGGATGGATTCGTCATTCCCGCG
CAGGCGGGAATCTAGACCTTAGAACAACAGCAATATTCAAAGATTATAAAAGACCTGTCA
TTCCCGCGCAGGCGGGAATCCAGACCTTAGAACAACAGCAATATTCAAAGGTTAGCTGAA
GCTTTAGAGATTCTGGATTCCCACTTTCGTGGGAATGACGGGATGTAGGTTCGTGGGAAT
GACGCGGTGCAGGTTTCCGTGCGGATGGATTCGTCATTCCCGCGCAGGCGGGAATCCAGA
CCTTGGGATAACAGCAATATTCAAAGGTTATAAAAGACCCGTCATTCCCGCGCAGGCGGG
AATCTAGACCTTAGAACAACAGTAATATTCAAAGGTTAGCTGAAGCTTTAGAGATTCTGG
ATTCCCACTTTCGTGGGAATGACGGGATTAGAGTTTCAAAATTTATTCTAAATAGCTGAA
ACTCAACGCACTGGATTCCCGCCTGCGCGGGAATGACGAATTTTAGGTTTCTGATTTTGG
TTTTCTGTTTTTGTAGGAATGATGAAATTTTGAGTTTTAGGAATTTATCGGAAAAAAACAG
AAACCGCTCCGCCGTCATTCCCGCGTAGGCGGGAATCCAGACCGTTGGGCATCTGCAGCG
GTTTGCTAAAAACCGCTTTACTGTGATAAGTGCGCAGGGTTAGAATGGCGCGGTAACCTT
ATATATTGTACCCCGTCAAAGGGGCGCATTGCTTTTCTTAACATTCCCCTTTGGCAGCCA
AGTGAAAGGGCTTTTCAATCAGCAATTCGGCGGGCGCGGAATCGGGCGGTTTACCGAACC
CCGGCGTTCGCGGCGCGCCGCCCCGTCCCGTGAAGGCAAACTCAAGGAATAAAAGATGAA
TAAAACTTGGAAACGGCAGGTTTTCCGCCATACCGCGCTTTATACCGCCATATTGATGTT
TTCCCATACCGGCGGGGGGGGGGCAGGCGCAAGCGCAAACGCAAACGCAAACGCATAAA
TACGCTATTGTAATGAACGCGCAAAATCTGCCCGAGGTAAAGTGGGGGGATCAATATCAG
TCATTGACGCACAAAAGCAATGAACGCGAAGTTATCCATACGAGTGGTTTTGGTTTGGCA
AAAAAGAGCATTAGTTTCTCATTCAATAATACCGATGAAGTTGTTGCTGAAAAAAAAGAT
ACTGTCGTTTTCGGCGCGGCGACCTACCTGCCGCCCTACGGAAAGGTTTCCGGTTTTGAT
ACCGCTAAGCTGACCGAGCGCAAAAATGCCCTTGATCAGATTGGTACGACCAAAACGGGG
CTGGTAGGCTACAGCTACGAAGGTAGCACATGCTCCAGCGGAGGTTGTCCTACAGTTGCC
TATAGAACCCAATTTACCTTCGGCAATTCCAGTTTGGCAAAAAAGGCAAACGGCGGCGGG
CTGGATATATACGAAGACAAAAGCCGCGACAATTCGCCCATTTACAAATTGAAGGATCAT
CCTTGGTTGGGCGTGTCTTTCAATTTGGGCGGAGAGAGCTCCTTCAAACCAAAGAGACAA
GGTTCTTTGGTATCTTCTTTTAGCGAGGACGTGACGCAGCAAAATGGTGCGGGCAGCCAA
CACAAAGACAAAAACCTCGTTTATACGACAGACGATTACAAGAGTCAGAATAATAAAAAC

CATCAGGACAAACACCACGCCGTCGCCTTTTATCTGAACGCCAAGCTGCACCTGCTGGAT
AAAAAACACATTAAAAATATCGTGCAAGGTAAAACAGTTAATTTGGGTATCTTGAAAACA
CGCATCGAGCCGACGGAAGCATGGAAAAGACGGAATAGTAACTTTTTTAACGGTAGTTGG
ACGTATGAAGAGAAAGGAACAGTCAGCGTCAAACTCAAATTGCCGGAAGTCAAAGCAGGC
CGCTGCATCAACGCAAATAACCCCAATAAGAGTACCAAAGCCCCTTCCCCCGCACTGACT
GCCCCCGCGCTGTGGTTCGGACCTGTGCAAAATGGTAAGGTGCAGATGTATTCCGCTTCG
GTTTCCACCTACCCCGATAGTTCGAGCAGCCGCATCTTCCTTCAAAATCTGAAAAGAAAA
ACCGACCCCAACAAACCCGGCCGCCATTCCCTCGCAGACTTGGCTAAGTCGGATATTGAA
AATCGACAGCCGAATTTCACAGGGCGGCAAACCATCATCCGATTGGATGGCGGCGTACAG
CAGATCAAACTGGGTAGAAACAATGATGAGGTCGCCAATTTTAATGGAAATGACGGCAAA
AACGACACTTTCGGCATTGTTAGTGAAGGGAGCTTCATGCCTGATGCCAGCGAGTGGAAA
AAAGTATTGCTGCCTTGGACGGTTCGTGCTTCCAATGATGACGGTCAATTTAACACATTC
AACAAAGAAGAAAAAGACGGCAAGCCAAAATACAGCCAAAAATACCGCAGCCGCGACAAC
GGCAAGCACGAGCGCAATTTGGGCGACATCGTCAACAGCCCCATCGTGGCGGTCGGCGAG
TATTTGGCTACTTCCGCCAACGACGGGATGGTGCATATCTTCAAACAAAGCGGCGGGGAC
AAGCGCAGCTACAATCTGAAGCTCAGTTATATCCCGGGTACGATGCCGCGCAAGGATATT
CAAAACACCGAATCCACCCTTGCCAAAGAGCTGCGCGCCTTTGCCGAAAAAAGCTATGTG
GGCGACCGCTACGGCGTGGACGGCGGCTTTGTCTTGCGCAAAGTCGAACGGAACGGGAAA
GACCATGTGTTTATGTTCGGCGCGATGGGCTTTGGCGGCAGAGGCGCGTATGCCTTGGAT
TTAAGCAAAATCGACAGCGGCAACGGCAACCTGGCAGACGTTTCCCTGTTTGATGTCAAA
CATGACAAGAATGGCAATAACGGCGTGAAATTAGGCTACACCGTCGGCACGCCGCAAATC
GGCAAAACCCACGACGGCAAATACGCCGCTTTCCTCGCCTCCGGTTATGCGACTAAAGAC
ATTACCAGCGGCGACAATAAAACCGCGCTGTATGTGTATGATTTGGAAAGCAGCGGCACG
CTGATTAAAAAAATCGAAGTACCCGGTGGCAAGGGCGGGCTTTCGTCCCCCACGCTGGTG
GATAAAGATTTGGACGGCACGGTCGATATCGCCTATGCCGGCGATCGCGGCGGCAGTATG
TACCGCTTTGATTTGAGCAATCAAGATCCTAATCAATGGTCTGTACGCGCCATTTTTGAA
GGCACAAAACCGATTACTTCCGCGCCCGCTATTTCCCAACTGAAAGACAAACGCGTGGTT
ATCTTCGGCACGGGCAGTGATTTGAGTGAGGATGATGTACTCAGTACGAGCGAACAATAT
ATTTACGGTATCTTCGACGACGATACGGTGGCGAATAACGTAAATGTAAAACTCAGCGGT
TTGGGAGGCGGGCTGCTCGAGCAAGAGCTTAAGCAGGAGGATAAAACCTTATTCCTGACC
GATTACAAGCGATCCGACGGATCGGGCAGCAAAGGGTGGGTAGTGAAATTGAAGGGCGGA
CAGCGCGTTACCGTCAAACCGACCGTGGTATTGCGTACCGCCTTTGTAACCATCCATAAA
TATACGGGTACGGACAAATGCGGCGCGGAAACCGCCATTTTGGGTATCAATACCGCCGAC
GGCGGCAAGCTGACCAAGAAAAGCGCGCGCCCGATTGTGCCGGCCGAGAATCAGGCTGTC
GCGCAATATTCCGGCCATAAGAAAGGCATCAACGGCAAATCCATCCCTATAGGTTGTATG
CAAAAAGGCAATGAAATCGTCTGCCCGAACGGATATGTTTACGACAAACCGGTTAATGTG
CGTTATCTGGATGAAAAGAAAACAGACGGATTTTCAACAACGGCAGACGGCGATGCGGGC
GGCAGCGGTATAGACCCCGCCGGCAAGCGTTCCGGCAAAAACAACCGCTGCTTCTCCCAA
AAAGGGGTGCGCACCCTGCTGATGAACGATTTGGACAGCTTGGACATTACCGGCCCGACG
TGCGGTATGAAACGAATCAGCTGGCGTGAAGTCTTCTACTGATTTGCACGCGAAAATGCC
GTCCGAAAGGTTTTCGGACGGCATTTTTTGCGTTTTTCGGGAGGGGCGGGTTCGTAAAAG
GCGGGCTATAGGGTAGGCTTCATCTCGCCAATCTCACTGAATCCATCAATTTCCACAATT
CAATTAAATACCGTCAAACCGATGCCGTCATTCCCGCGCAGGCGGGAATCTAGACCTTAG
AACAACAGCAATATTCAAAGGTTAGCTGAAGCTTTAGAGATTCTGGATTCCCACTTTCGT
GGGAATGACGGGATGCAGGTTTCCGTATGAATGGATTCGTCATTCCCGCGCAGGCGGGAA
TCCAGACCTTAGAACAACAGTAATATTCAAAGATTATCTGAAAGTCCGAGATTCTGGATT
CCCACTTTCGTGGGAATGACGGGATTTTAGGTTTCTGATTTTGGTTTTCTGTTTTTGTAG
GAATGATGAAATTTTGAGTTTTAGGAATTTACCGGAAAAAACAGAAACCGTTCTGTCGTC
ATTCCCGCGCAGGCGGGAATCTAGACATTCAATGCTAAGGCAATTTATCGGGAATGACTG
AAACTCAAAAAACTGGATTCCCACTTTCGTGGGAATGACGGGATTTGAGATTGCGGCATT
TATCGGGAGCAACAGAAACCGCTCTGCCGTCATTCCCGCGCAGGCGGGAATCCAGACCTT
AGAACAACAGTAATATTCAAAGATTATCTGAAAGTCCGAGATTCTGGATTCCCGCCTGCG
CGGGAATGACGAATTTTAGGTTTCTGATTTTGTTTTTCTGTTTTTGTGGGAATGATGAAA
TTTTGAGTTTTAGGAATTTATCGGAAAAAACAGAAACCGCTCTGCCGTCATTCCCGCGCA
GGCGGGAATCTAGACCTTAGAACAACAGCAATATTCAAAGATTATCTGAAAGTCTGAGAT
TCTAGATTCCCACTTTCGTGGGAATGACGGGATGTAGGTTCGTGGGAATGACGTGGTGCA
GGTTCGTGGGAATGACGTGGTGCAGGTTCGTAGGAATGACGTGGTGCAGGTTTCCGTGCG
GATGGATTCGTCATTCCCGCGCAGGCGGGAATCTAGACCTTAGAACAACAGCAATATTCA
AAGGTTATCTGAAAGTCCGAGATTCTGGATTCCCACTTTCGTGGGAATGGCGCGATTAGA
GTTTCAAAATTTATTCTAAATAGCTGAAACTCAACGCACTGGATTCCCGCCTGCGCGGGA
ATGACGAAGTGGAAGTTACCCGAAACTTAAAACAAGTGAAACCGAACGAACCGGATTCCC
ACTTTCGTGGGAATGACGGGATGCAGGTTTCCGTACGGATGGATTCGTCATTCCCGCGCA
GGCGGGAATCTAGACATTCAATGCTAAGGCAATTTATCGGGAATGACTGAAACTCAAAAA
ACTGGATTCCCACTTTCGTGGGAATGACGGGATTAGAGTTTCAAAATTTATTCTAAATAG
CTGAAGCTCAACGCACTGGATTCCCGCCTGCGCGGGAATGACGAAGTGGAAGTTACCCGA
AACTTAAAACAAGCGAAACCGAACGAACTGGATTCCCATTGTCGTGGAAATGACGGGATT
TTAGGTTTCTGTTTTTGGTTTTCTGTTTTCGTGGGAATGACGGGATGTAGGTTCGTGGGA
ATGACGGTTCAGTTGCTACGCATTTACCCTGCGCAAAGCTTTATCCACTATCTTGTAACC
TGTCTGACAATCTGTCCTCTCTTACAAAATGCCGAAACTTTTTCAGGCTGCATTTTGGGG
CTGCCTGTGCGGAATTTGGCGGTAGGCGCGGTAGTAGGGTTCGAGCTGTCGGGCGATGAG
TTGGAGCTGTTGGAGGAGGATGTGGCTTTGTGTTCCGCTGCTGTGGGTGCGGAGGGTGTC
GAGTTCGCCGCGCAGTGTATCCAGTGCTGTCTGAAAGTCGTCGGGTTCGGTTTCGGGCAG
GTGTTGGAAGATGTGGGCGGTGTGTTCGGCGGCGAGGTGGAACTGTGCGGTAAAGTCGGG
GCTGCATTCTTCGTGCATTTCGCTGCGGTATGCGCCGAGGGCGGAGATGTAGCCGGTCAG
GGCGTAGCCGGTTTTGAGCAGGGTAAAGCCGGGTTGCAGGCTGTCGGCGAATTTTGCGGG

TTCGCTGCTCATGTCGGAAAGGGTGCTGCTGAGGGCGGCGGTGTGTTCGTGGGCGCGGCG
GCGGGTGGCGCGGTATTCGACGTCGTCGCCGGTTTCGCCGCTTTTGAGGCGTTCGGTGAT
TTTTTCGAGATAGGCACCGTTGCTGCATACGGCAAGGGCGGCGGTGCGTTCGAGCGTGAG
GTATTTCCAGTCTGGCCACAGGTAGCTGACTGCCGCCCAGGCAAGGGATGCGCCGATAAT
GGTGTCGATGATGCGTACGGGCATGGCGGCGTATACGTCCAAACCTGCGAGGGAGAGGCT
GGTCAGGGCTTGAATGGTAATGAAGAAGGTGGAGAAACTGTATTTGTAGGTGCGGGTCAT
GAAAAAGAGGGTGGTACTGGCGATGACAATCCAGAGTTTGGTTTCGACAGACGGGGTGAA
GTAGGGGACGAGCGAGCCGACGATTACGCCGAGTACGGTGCCGGCGATGCGCTGGCGGAC
GCGGCTTTTGGTGGCGGTGTAGTTGGGTTGGCAGACGAAAAGGGCGGTCAGTAGTATCCA
GTAGCCGAGGTTGAGGTTGAGGGCTTCGACGATGGTGCAGGCGGCGGCAACGACGAGGGA
CAGGCGGACGGCATGGCGGAATACGCCTGATTCGAGGTTTAGCTGCGGACGGATTGCCTG
CCAGGTGTTTTTGAGGCTGCTGGTTTCGAGGGCGGCGATGCGGGTGTCGCCCATGCGGTC
GTTTTCTGCCTGCAGGCCGTTGTGCTGGAGTTGGCGGAACTGCTGGTCGACGCTGCCGAG
GTTGTCGAGAAGGCGGCGCAGGTGGCGGATGTCGGGACTGTCGTTGCTGTCTGAAAGGAG
GCGCAGCGATTGGCGGCAGCCTTCGATGGCGCGGCCGAGGCGTTTGCTGTAAACGTAGTC
TTTGCTTGCGCGCAGGGCTTGGGCGGTGTTGCGGCAGGCTTGTCCCTGCATTTCGAGCAG
GCGGTGGATGCGGAAGATGATGTCGGTGTTTTTGAATTTTTCGGACATTTCCTGATAATC
GACGTGGGCGGAGCTGATGCGTTCGTGTATGTCTTGGGCGGCAAAGTAGTAACGCAGCAT
TTTGGCGGTGCGCGGGTGGCGGTGTTTGCCGCGAAGGCGGTAAAACAGGGCGGAACGGCA
TTGGTTGAAGGCGGTGATGACGCCGGTGTTGCTCATGGCGAGGTCGATGTGGCGGTTGCC
TATCCAGGCTGCCTCATCGGGGTCGAAGAAGTCGGCTTTGGCTTCGAGGTAGCCGCCGAG
TGCGTCGTAGGCGTTGGCGACGCTTTCTTGGACGGGGCGGTGGGGCAGGACGATTTGGAA
CAGGAGGATGGCGGTGCTGTACAGTACGGTGCCGCATAAAATCATGAAGGGGTTGGTCAG
CCAGTAGGTTTCGGGGGTGTAGGTAAGTGTGGTGTAGGTGGCGACGGCGAGTGCACCGAA
GGCGAAGGTGCGGTATTTGAGCCCGACCGCGCCTAAAATGGTGAAGCCGAAGGTCATCAG
GGTCATGGCGAGGATGAAGGGCAGCCCTGTGCCGAGGGTGCTTTGTGCCGTGAGCGAGGA
GAGGGTGAACAGGGCGACGGTGGTGATGATGTTTTTCAGCCGTCCGGTCAGGCGGTTGTC
CAAATCGACAAGGCCGCCGGCGATGATGCCGAGTACGAAGGGCATGGCGAGCTTGGGTTC
GCCTAGCTGCCAGACGATGGAGGCGGCGGTAAAAACACTGGCGAAAACGGGAAGCGAGGT
AATGAGCAGAGGCTTGAGGAGTGGGGTTTTCATGGTTTTACCGGTTTATTGTTATGAAGT
GAATATAGTGGATTAACAAAAACCAGTACGGCGTTGCCTCGCCTTAGCTGAAAGAGAACG
ATTCTCTAAGGTGCTCAAGCACCAAGTGAATCGGTTCCGTACTATTTGTGCTGTCTGCGG
CTTCGTCGCCTTGTCCTGATTTTTGTTAATCCACTATAAATTTAATCCACTATAAAGTGT
AGCACATGAATGGGGCGGATAAAATCATGCCGTCTGAAAACGGGGATGCGGTTTTCAGAC
GGCATTGGGTTTTGCGGATCAGGAAATGAGGTTGAGACCGTTGACCCTGTCGTAAAGGAG
TTCGGGCGTTTTGCCTTCTTTGTGCAGTTGGATGTGCAATCGCAGGTTGTTGGCGGAAAC
GGACTGGCGCAGGGCTTCTTCGTAACTGATGATGCCGTGACGGTACAGTTCGAAAAGGTT
TTGATCCATCGTCTGCATTCCGTCGGTTTTGGCGGTTTCCATGATTTTACTGATGTTCAT
CAGGTCGCCCTTCAGGATGAAGTCTTGGATGGCGGGCGTGTTGATGAGCAAGTCGACAAC
CGCCGTCCTGCCCGTTTTGTCTTGTTTGAGGGCGAGGCGTTGGCAGATGATGCCGGTCAG
GTTGAGGGCGATGTCGATCAGTATTTGGTTGTGCTGTTCTTTGGGGTAGAAGTTGAGTAT
GCGTTCGAGCGACTGCGGCGCGGTGTTGGCGTGGAGCGTAAAAATGCACAGGTGGCCGGT
TTGGGCGAGCTGCATCGCGTATTCCATACTTTCCCTGCTGCGGACTTCGCCGATGCAGAC
CACGTCGGGGGATTGGCGCATAGCGTTTTGTACCGCCGTCTGCCAGTTTATGGTGTCGAC
GCCGATTTCGCGCTGGGTAAAGATGCAGCGGCGCGGTTTGTAGATAAATTCAATCGGGTC
TTCGATGGTAACGATATGGCTGGGCAGGGTTTTGTTGCGGTGTTCGAGCATAGTCGCCAT
CGTGGTGGATTTGCCCGAACCGGTAGGCCCGACGATAATCAGCAGCCCGCGCGGTGCGAC
GGCGAGGTCTTTGAGTTTTTCGGGCAGGCCCAATTCCTGCATTTGCGGGATGACGTGGTT
GATGCGCCGCAAAACCAAACCTGCGCTGCCTTGGCTGTGGTAGGCGTTGGCGCGGTAGCG
CGTGCCGCTGCGCGACTGGACGGAGTAGTTGATTTCGCCGTCGCGCCGGAATATTTCCGA
TTGTTCGGCGTTCATCGTCGATGCGGCGATGGCGGCGGTTTCCTCGCCCGTCAGCGCCTT
TTGCGGCTGCGGGGTTAATGCGCTGTTGATTTTCAACGAGGGCGGGAATCCTTTGCTGAT
AAGGATGTCGGACGCGTTTTGTGCTTCTGCGGTTTCGCACAGGCGGTCGAGCAGCGGGTG
GAAGTGTGCGCCGATTTCGGCCGGGGTTTCGGATCGGCTTTGTTTTTTTTGAGAATACAC
TTGAACCATTTCGTCCAAGATGTCGTGCAGGTTATCGGTATTCATCGTTAGCTTCTTTTC
GGTTTAAGCCTTGCAGTTTGCGGCGGCAGGTTTCAACAGGAAGGCGGACGCTTCTTGTTC
GGAAAGGTAGCCGGGCGGGATGCTGCGTCCCGCCCCGCGTGTTTGCGCCTTGTTTTCCCG
CCGGTATGGCCGGAAAGCGGTTGTGTGTCAGAAACTCATACTTTCGCTGTTTTGCGCGCG
TCTGCGTGCGACTTCCGGTGCGATCAGCCCTTGGCGCACCAGCGATTGCAGCGATTGGTC
CATTGTCTGCATACCGCTCGCCTGCCCGGTTTGCAGGACGGAGTTAATCTGCGTGATTTT
GTTTTCGCGGATGAGGTTGCGGACGGCGGGTTGGCAATCAGGATTTCGTGCGAGGCGAC
ACGGCCGTTGCCGTCGTGCGTTTTCAGCAGGTTTTGGGAGATGACGGCGGTCAGCGATTC
GGACAGCATAGAGCGCACCATTTCTTTTTCTCCCGCCGGGAATACGTCCACAATACGGTC
GACGGTTTTTGCTGCGCCGGTCGTGTGCAGCGTGCCGAAAACCAAGTGTCCGGTTTCGGC
GGCGGTCAGTGCCAAGCCGATGGTTTCTGGGTCGCGCATCTCGCCGACAAGGATAACGTC
GGGGTCTTCGCGCAATGCGGAACGCAGCGCGTTGGCGAAGCTGAGGGTGTGCTGGTGCAG
CTCGCGCTGGTTAATCAGGGATTTTTTGCTTTGGTGGACGAATTCAATCGGGTCTTCGAT
GGTCAGGATGTGTGCCGGCTGGGTTTCGTTGATGTAGTTGATCATCGCGGCAAGCGTGGT
CGATTTGCCCGAACCGGTAGGGCCGGTAACCAAAACCATGCCGCGCGGCGATTCTGCGAT
TTTTTGGAAAATGCTCGGGGCTTTCAATTCTTCCAGCGATAAGACGGTGCTGGGAATGGT
GCGGAATACGGCGGCGGGACCGCGGCCGATGTTGAAGGCGTTGACGCGGAATCGGGCGAC
GTTGGGCAGTTCGAACGAGAAGTCGACTTCCAAGTTTTGCTGGTAGATTTTCCGCTGGTG
GTCGTTCATCACCGAAGTTACCATATTACCGACCTCTTCCGCGCTCATTTCGGGAAGGTT
GATGCGCCGCATATCGCCGTGAACCCGAATCATAGGGGATATGCCCGAACTCAGGTGAAG
GTCGGATGCTTTGTTTTTAGCGCCGAAGGCGAGTAAGTCGGTAATCTGCATAATGCGGCT

CTGTTTAGTATAATGTTTCGATTGGTTGGAATGGTTCTAACAACCTTGATTGTACCGCCC
TGACTGGAGGGGTTTCAACTGTTTAATCATTTTTAATTAGGGGATAATCTATGACGGTGT
TGCAAGAACGTTATTGTGAGGTGTCCGACCGTATCGGAAAATTGGTTCTGCAGGCGGGCA
GGGAGCCGCATTCCGTCAGCCTGATTGCCGTCGGTAAGACTTTCCCTTCAGACGGCATCC
GCGAAGTTTACGCCGCCGGACAGCGTGATTTCGGCGAGAACTATATTCAGGAGTGGTACG
GCAAAACGGAAGAGTTGGCGGATTTGACCGACATCGTGTGGCACGTCATCGGCGATGTGC
AGTCCAACAAAACCAAGTTTGTCGCCGAACGCGCGCATTGGGTGCATACCGTATGCCGTC
TGAAAACCGCCGTCCGGCTGAGCGGGCAACGTCCTTCCTCAATGCCGCCTTTGCAGGTGT
GTATCGAGGTGAACATTGCGGGCGAGGCGGTGAAGCACGGTGTCGCGCCCGAAGAAGCAG
TCGCGCTTGCTGTGGAAGTGGCGAAGCTGCCGAATATCGTCGTACGTGGACTGATGTGTG
TTGCCAAAGCCAACAGCAGTGAAACGGAGTTGAAGGTGCAATTTCAAACGATGCGGAAAC
TGCTTGCCGACCTCAATGCGGCTGGCGTTAAGGCAGACGTGCTGTCTATGGGGATGTCGG
ACGATATGCCTGCCGCCATTGAGTGCGGTGCGACACACGTCCGTATCGGCAGCGCGATTT
TCGGGAAAAGGGGCTGATGGAAATTCGGGCAATAAAATATACGGCAATGGCTGCGTTGCT
TGCATTTACGGTTGCAGGCTGCCGGCTGGCGGGGTGGTATGAGTGTTCGTCCCTCACCGG
CTGGTGTAAGCCGAGAAAACCGGCTGCCATCGATTTTTGGGATATTGGCGGCGAGAGTCC
GCCGTCTTTAGGGGACTACGAGATACCGCTTTCAGACGGCAATCGTTCCGTCAGGGCAAA
CGAATATGAATCCGCACAACAATCTTACTTTTACAGGAAAATAGGGAAGTTTGAAGCCTG
CGGGCTGGATTGGCGTACGCGTGACGGCAAACCTTTGATTGAGACGTTCAAACAGGGAGG
ATTTGACTGCTTGGAAAAGCAGGGGTTGCGGCGCAACGGTCTGTCCGAGCGCGTCCGATG
GTAAAAAATTGGGAATGAATTTAGTAAGGTAATTTTGAATAGGGTAGAAATAATGAATGT
TTATTTTCTCGGCGGCGGCAATATGGCGGCTGCCGTTGCGGGCGGATTGGTCAAACAAGG
CGGTTACCGCATCTATATAGCCAATCGGGGTGCGGAAAAACGCGAACGTTTGGAAAAAGA
GTTGGGGGTCGAAACTTCGGCAACCCTGCCGGAGCTTCATTCCGACGATGTTTTAATCCT
TGCCGTCAAACCGCAGGATATGGAAGCTGCGTGCAAAAATATCCGCACCAACGGCGCATT
GGTGCTTTCTGTCGCAGCCGGATTGTCGGTCGGTACGCTCAGCCGTTACCTCGGGGGAAC
ACGCCGCATTGTCCGGGTTATGCCGAATACACCCGGAAAAATCGGGCTGGGCGTATCTGG
TATGTATGCCGAAGCGGAAGTATCGGAAACAGACCGCAGGATTGCCGATCGAATCATGAA
ATCAGTCGGTTTGACTGTTTGGTTGGATGATGAGGAAAAAATGCACGGCATTACCGGCAT
CAGCGGCAGCGGACCGGCTTATGTGTTTTATCTGCTGGACGCATTGCAAAATGCCGCCAT
CCGACAAGGGTTTGATATGGCAGAAGCACGCGCGCTCAGTCTGGCAACGTTTAAAGGAGC
GGTTGCCCTTGCCGAGCAGACGGGTGAAGATTTCGAGAAGCTTCAAAAAAATGTAACGTC
AAAAGGCGGGACAACCCACGAAGCCGTGGAAGCTTTCAGGCGGCATCGTGTCGCCGAAGC
CATAAGCGAGGGCGTTTGTGCCTGTGTGCGCCGTTCGCAGGAAATGGAACGGCAATATCA
ATAATGTAAAGAAAATAAAAAAACCAATCCAAAACGTGTTATGATGCGCGTTTTCAAAAA
CGCCTTAGGCAATAAGCCTTATAAAAATCAAAGGAATAAAGCCACTTTGTGGTGCTTTGT
TTTTTGCGGTGAACCGAGAGGATATACATTATGGCAAAGCTGACAGAACAAGATATTTTG
AATTGGAGCGGGCCGGAAGACGATTATATGAATGACGACCATTTGGCTTTTTTCCGCGAA
TTGCTGGTAAAAATGCAAGACGAACTCATCGAAAATGCTTCCGCTACGACAGGGCATCTC
CAAGAACACGAATCAGCCCCCGATCCTGCCGACCGTGCCACACAGGAAGAAGAGTACGCA
TTGGAACTCCGTACCCGCGATCGGGAACGAAAACTTCTCAGTAAAATACAGGCGACCATC
CGCAATATTGATGAAGGGGATTATGGATTCTGTGCCGATACGGGAGAGCCTATCGGTTTG
AAGCGGCTGCTGGCACGCCCGACAGCCACTTTATCTGTTGAGTCCCAAGAACGCCGAGAG
AGGATGAAAAAACAGTTTGCCGACTGATGGCGGCAAACAAAATGCCGTCTGAGTCCCCGA
GTTTCAGACAGCATATTCACAAAGGCGCACCAGCCGGAGGAGGGAGAGGAAAGGATTGTT
GGAGGCGGCGCAGTATTTAGCAGAAATAAAAAACCTTATCCGACAGCGACATGACGAATT
TCCCCAAAAAAATCCCGCTGAAAGCATTGACCGTTTTTCCCTGTGGGCGTATAGTTCGGT
TCTTCGCTGCTGCAGAAGTGGCGGACGAACTGAAAAGTATAGCACAGAATGTTGGGGATA
TCGAGAGATATCTTGACAGGCGGAAGGAATACTTTATAATTCGCAACGCTCTTTAACAAA
ACAGATTACCGATAAGTGTGAGTGCCTTGAGTCTCACACTGTTTGAAAGACAGACAAGAT
AATGTTTTGAACATTGTCCTGTTGGTTTCTTTGAAGCAGACCAGAAGTTAAAAAGTTAGA
GATTGAACATAAGAGTTTGATCCTGGCTCAGATTGAACGCTGGCGGCATGCTTTACACAT
GCAAGTCGGACGGCAGCACAGAGAAGCTTGCTTCTCGGGTGGCGAGTGGCGAACGGGTGA
GTAACATATCGGAACGTACCGAGTAGTGGGGGATAACTGATCGAAAGATCAGCTAATACC
GCATACGTCTTGAGAGAGAAAGCAGGGGACCTTCGGGCCTTGCGCTATTCGAGCGGCCGA
TATCTGATTAGCTAGTTGGTGGGGTAAAGGCCTACCAAGGCGACGATCAGTAGCGGGTCT
GAGAGGATGATCCGCCACACTGGGACTGAGACACGGCCCAGACTCCTACGGGAGGCAGCA
GTGGGGAATTTTGGACAATGGGCGCAAGCCTGATCCAGCCATGCCGCGTGTCTGAAGAAG
GCCTTCGGGTTGTAAAGGACTTTTGTCAGGGAAGAAAAGGCTGTTGCTAATATCAGCGGC
TGATGACGGTACCTGAAGAATAAGCACCGGCTAACTACGTGCCAGCAGCCGCGGTAATAC
GTAGGGTGCGAGCGTTAATCGGAATTACTGGGCGTAAAGCGGGCGCAGACGGTTACTTAA
GCAGGATGTGAAATCCCCGGGCTCAACCCGGGAACTGCGTTCTGAACTGGGTGACTCGAG
TGTGTCAGAGGGAGGTAGAATTCCACGTGTAGCAGTGAAATGCGTAGAGATGTGGAGGAA
TACCGATGGCGAAGGCAGCCTCCTGGGACAACACTGACGTTCATGCCCGAAAGCGTGGGT
AGCAAACAGGATTAGATACCCTGGTAGTCCACGCCCTAAACGATGTCAATTAGCTGTTGG
GCAACCTGATTGCTTGGTAGCGTAGCTAACGCGTGAAATTGACCGCCTGGGGAGTACGGT
CGCAAGATTAAAACTCAAAGGAATTGACGGGGACCCGCACAAGCGGTGGATGATGTGGAT
TAATTCGATGCAACGCGAAGAACCTTACCTGGTCTTGACATGTACGGAATCCTCCGGAGA
CGGAGGAGTGCCTTCGGGAGCCGTAACACAGGTGCTGCATGGCTGTCGTCAGCTCGTGTC
GTGAGATGTTGGGTTAAGTCCCGCAACGAGCGCAACCCTTGTCATTAGTTGCCATCATTC
AGTTGGGCACTCTAATGAGACTGCCGGTGACAAGCCGGAGGAAGGTGGGGATGACGTCAA
GTCCTCATGGCCCTTATGACCAGGGCTTCACACGTCATACAATGGTCGGTACAGAGGGTA
GCCAAGCCGCGAGGCGGAGCCAATCTCACAAAACCGATCGTAGTCCGGATTGCACTCTGC
AACTCGAGTGCATGAAGTCGGAATCGCTAGTAATCGCAGGTCAGCATACTGCGGTGAATA
CGTTCCCGGGTCTTGTACACACCGCCCGTCACACCATGGAGTGGGGGATACCAGAAGTA

GGTAGGATAACCACAAGGAGTCCGCTTACCACGGTATGCTTCATGACTGGGGTGAAGTCG
TAACAAGGTAGCCGTAGGGGAACCTGCGGCTGGATCACCTCCTTTCTAGAGAAAGAAGAG
GCTTTAGGCATTCACACTTATCGGTAAACTGAAAAAGATGCGGAAGAAGCTTGAGTGAAG
GCAAGATTCGCTTAAGAAGAGAATCCGGGTTTGTAGCTCAGCTGGTTAGAGCACACGCTT
GATAAGCGTGGGGTCGGAGGTTCAAGTCCTCCCAGACCCACCAAGAACGGGGGCATAGCT
CAGTTGGTAGAGCACCTGCTTTGCAAGCAGGGGGTCATCGGTTCGATCCCGTTTGCCTCC
ACCAATACTGTACAAATCAAAACGGAAGAATGGAACAGAATCCATTCAGGGCGACGTCAC
ACTTGACCAAGAACAAAATGCTGATATAATAATCAGCTCGTTTTGATTTGCACAGTAGAT
AGCAATATCGAACGCATCGATCTTTAACAAATTGGAAAGCCGAAATCAACAAACAAAGAC
AAAGCGTTTGTTTTGATTTTTTATTCTTTGCAAAGGATAAAAATCTCTCGCAAGAGAAAA
GAAAACAAACACAGTATTTGGGTGATGATTGTATCGACTTAATCCTGAAACACAAAAGGC
AGGATTAAGACACAACAAAGCAGTAAGCTTTATCAAAGTAGGAAATTCAAGTCTGATGTT
CTAGTCAACGGAATGTTAGGCAAAGTCAAAGAAGTTCTTGAAATGATAGAGTCAAGTGAA
TAAGTGCATCAGGTGGATGCCTTGGCGATGATAGGCGACGAAGGACGTGTAAGCCTGCGA
AAAGCGCGGGGGAGCTGGCAATAAAGCAATGATCCCGCGATGTCCGAATGGGGAAACCCA
CTGCATTCTGTGCAGTATCCTAAGTTGAATACATAGACTTAGAGAAGCGAACCCGGAGAA
CTGAACCATCTAAGTACCCGGAGGAAAAGAAATCAACCGAGATTCCGCAAGTAGTGGCGA
GCGAACGCGGAGGAGCCTGTACGTAATAACTGTCGAGATAGAAGAACAAGCTGGGAAGCT
TGACCATAGTGGGTGACAGTCCCGTATTCGAAATCTCAACAGCGGTACTAAGCGTACGAA
AAGTAGGGCGGGGCACGTGAAATCCTGTCTGAATATGGGGGGACCATCCTCCAAGGCTAA
ATACTCATCATCGACCGATAGTGAACCAGTACCGTGAGGGAAAGGCGAAAAGAACCCCGG
GAGGGGAGTGAAACAGAACCTGAAACCTGATGCATACAAACAGTGGGAGCGCCCTAGTGG
TGTGACTGCGTACCTTTTGTATAATGGGTCAACGACTTACATTCAGTAGCGAGCTTAACC
GAATAGGGGAGGCGTAGGGAAACCGAGTCTTAATAGGGCGATGAGTTGCTGGGTGTAGAC
CCGAAACCGAGTGATCTATCCATGGCCAGGTTGAAGGTGCCGTAACAGGTACTGGAGGAC
CGAACCCACGCATGTTGCAAAATGCGGGGATGAGCTGTGGATAGGGGTGAAAGGCTAAAC
AAACTCGGAGATAGCTGGTTCTCCCCGAAAACTATTTAGGTAGTGCCTCGAGCAAGACAC
TGATGGGGGTAAAGCACTGTTATGGCTAGGGGGTTATTGCAACTTACCAACCCATGGCAA
ACTAAGAATACCATCAAGTGGTTCCTCGGGAGACAGACAGCGGGTGCTAACGTCCGTTGT
CAAGAGGGAAACAACCCAGACCGCCAGCTAAGGTCCCAAATGATAGATTAAGTGGTAAAC
GAAGTGGGAAGGCCCAGACAGCCAGGATGTTGGCTTAGAAGCAGCCATCATTTAAAGAAA
GCGTAATAGCTCACTGGTCGAGTCGTCCTGCGCGGAAGATGTAACGGGGCTCAAATCTAT
AACCGAAGCTGCGGATGCCGGTTTACCGGCATGGTAGGGGAGCGTTCTGTAGGCTGATGA
AGGTGCATTGTAAAGTGTGCTGGAGGTATCAGAAGTGCGAATGTTGACATGAGTAGCGAT
AAAGCGGGTGAAAAGCCCGCTCGCCGAAAGCCCAAGGTTTCCTGCGCAACGTTCATCGGC
GTAGGGTGAGTCGGCCCCTAAGGCGAGGCAGAAATGCGTAGTCGATGGGAAACAGGTTAA
TATTCCTGTACTTGATTCAAATGCGATGTGGGGACGGAGAAGGTTAGGTTGGCAAGCTGT
TGGAATAGCTTGTTTAAGCCGGTAGGTGGAAGACTTAGGCAAATCCGGGTCTTCTTAACA
CCGAGAAGTGACGACGAGTGTCTACGGACACGAAGCAACCGATACCACGCTTCCAGGAAA
AGCCACTAAGCTTCAGTTTGAATCGAACCGTACCGCAAACCGACACAGGTGGGCAGGATG
AGAATTCTAAGGCGCTTGAGAGAACTCAGGAGAAGGAACTCGGCAAATTGATACCGTAAC
TTCGGGAGAAGGTATGCCCTCTAAGGTTAAGGACTTGCTCCGTAAGCCCCGGAGGGTCGC
AGAGAATAGGTGGCTGCGACTGTTTATTAAAAACACAGCACTCTGCTAACACGAAAGTGG
ACGTATAGGGTGTGACGCCTGCCCGGTGCTGGAAGGTTAATTGAAGATGTGAGAGCATCG
GATCGAAGCCCCAGTAAACGGCGGCCGTAACTATAACGGTCCTAAGGTAGCGAAATTCCT
TGTCGGGTAAGTTCCGACCCGCACGAATGGCGTAACGATGGCCACACTGTCTCCTCCTGA
GACTCAGCGAAGTTGAAGTGGTTGTGAAGATGCAATCTACCCGCTGCTAGACGGAAAGAC
CCCGTGAACCTTTACTGTAGCTTTGCATTGGACTTTGAAGTCACTTGTGTAGGATAGGTG
GGAGGCTTAGAAGCAGAGACGCCAGTCTCTGTGGAGCCGTCCTTGAAATACCACCCTGGT
GTCTTTGAGGTTCTAACCCAGACCCGTCATCCGGGTCGGGGACCGTGCATGGTAGGCAGT
TTGACTGGGGCGGTCTCCTCCCAAAGCGTAACGGAGGAGTTCGAAGGTTACCTAGGTCCG
GTCGGAAATCGGACTGATAGTGCAATGGCAAAAGGTAGCTTAACTGCGAGACCGACAAGT
CGAGCAGGTGCGAAAGCAGGACATAGTGATCCGGTGGTTCTGTATGGAAGGGCCATCGCT
CAACGGATAAAAGGTACTCCGGGGATAACAGGCTGATTCCGCCCAAGAGTTCATATCGAC
GGCGGAGTTTGGCACCTCGATGTCGGCTCATCACATCCTGGGGCTGTAGTCGGTCCCAAG
GGTATGGCTGTTCGCCATTTAAAGTGGTACGTGAGCTGGGTTTAAAACGTCGTGAGACAG
TTTGGTCCCTATCTGCAGTGGGCGTTGGAAGTTTGACGGGGGCTGCTCCTAGTACGAGAG
GACCGGAGTGGACGAACCTCTGGTGTACCGGTTGTAACGCCAGTTGCATAGCCGGGTAGC
TAAGTTCGGAAGAGATAAGCGCTGAAAGCATCTAAGCGCGAAACTCGCCTGAAGATGAGA
CTTCCCTTGCGGTTTAACCGCACTAAAGAGTCGTTCGAGACCAGGACGTTGATAGGTGGG
GTGTGGAAGCGCGGTAACGCGTGAAGCTAACCCATACTAATTGCTCGTGAGGCTTGACTC
TATCATTTGAAGAACTTCAAGAGATAAAAGCTTACTGACTGATTCAGTCATTACCGAATA
TATTGATTAAGGCTTTACCGATTTGTAACAGTTTAAGTTTGGCGGCCATAGCGAGTTGGT
CCCACGCCTTCCCATCCCGAACAGGACCGTGAAACGACTCAGCGCCGATGATAGTGTGGT
TCTTCCATGCGAAAGTAGGTCACTGCCAAACACCCATTCAGAAAACCCCCGATTATTCGG
GGGTTTTTGCTTTGCCCGGAAAAAATGTTTGCTTTGCCCGGAAAAAATGTCGGTGATGGC
GGGACGGCATCCGTACGGTGTCCGGTCGGGTTTGCGGAGGAACGGCTTGAAACTTTGGGA
TATTCATTTTAGAATGACTCGTTTTATCGTCGCAAGATGCGGTTTATTGTTTGCAACCCT
TAAAGGAAAAACCATGAAGAAAATGTTCGTGCTGTTCTGTATGCTGTTCTCCTGCGCCTT
CTCCCTTGCGGCGGTAAACATCAATGCGGCTTCGCAGCAGGAGTTGGAGGCGCTGCCAGG
CATAGGCCCTGCGGTGCTGGCGAAGCTGAAGGATCAGGCTTCCGTCGGCGCGCCCGCACC
AAAAGGCCCAGCCAAACCAGTGCTGCCCGCGGATAAAAAATAAAATAGGGGGAAGTCTGC
AGCCGCATCAAATGCCGTCTGAACATGCGTTCGGGCGGCGTTTTTATAACAAAAACACTT
CATGGCGGTTGGTTTTATGCCTATCTAAGTTTTGTGTCGTGCATACCTGAAGATTTCAG
ACGGCATCGGTTTATGCTGTCTGAAAAGTGTATTCCGTTTCAGTTTGTAAGCTATGGCAG

TCTGTTTGTCTTGTGTTTTGCGCAATTGCCCTTATTTTGAGCCGTGATTTTATTTTGAAT
TAGATGAAAAAATGAGTAATCAAGATTTTTATGCGACGCTGGGTGTGGCAAGAACAGCTA
CCGATGATGAGATTAAAAAAGCCTACCGGAAATTGGCGATGAAATACCATCCCGACCGCA
ATCCTGACAATAAAGAGGCGGAAGAGAAGTTTAAAGAAGTACAAAAGGCGTATGAAACTT
TGTCCGACAAGGAAAAGCGCGCTATGTACGACCAGTATGGTCATGCGGCGTTTGAAGGCG
GCGGACAGGGGGGCTTCGGAGGGTTTGGCGGATTTGGCGGTGCGCAGGGTTTTGACTTTG
GGGATATTTTCAGCCAAATGTTTGGAGGCGGTTCGGGGCGCGCCCAGCCTGATTATCAGG
GTGAGGACGTTCAAGTCGGTATCGAAATCACGCTTGAAGAAGCCGCAAAAGGTGTGAAGA
AACGCATCAATATTCCGACTTATGAAGCGTGTGATGTCTGTAACGGCAGTGGCGCGAAAC
CGGGGACATCCCCGGAAACCTGCCCGACTTGCAAAGGTTCGGGTACGGTGCACATCCAGC
AGGCGATTTTCCGTATGCAGCAGACTTGTCCGACCTGCCACGGTGCGGGCAAACACATTA
AAGAACCTTGCGTCAAATGCCGTGGCGCGGGGCGGAATAAGGCGGTCAAGACGGTGGAAG
TCAATATTCCCGCCGGTATCGATGACGGGCAGCGTATCCGTTTGAGCGGCGAAGGCGGGC
CGGGTATGCACGGTGCGCCTGCCGGCGACTTGTATGTAACCGTCCGCATTCGGGCGCATA
AGATTTTCCAACGCGACGGTCTGGACTTGCATTGCGAACTGCCGATCAGTTTTGCCACGG
CTGCTTTGGGCGGGGAGTTGGAAGTGCCGACCTTGGACGGAAAGGTCAAGCTCACCGTCC
CCAAAGAAACCCAAACCGGCAGGAGGATGCGCGTGAAGGGTAAGGGTGTCAAATCTTTAC
GCAGCAGCGCGACCGGCGATTTGTACTGCCATATTGTTGTCGAAACGCCTGTCAATTTGA
CCGACCGTCAAAAAGAGCTTTTGGAAGAATTTGAGCGGATTTCTACCGGCTTGGAAAACC
AAACACCGCGCAAGAAATCGTTTTTAGACAAGCTGCGCGATTTGTTTGATTGATTTTAAG
GTTCGGAAACAAGCAGCCGTATCGGGGAATCTCCTTGATACGGCTGTTTTTATTTGTTTA
AAAATAGTTTTTATTTTCAATGGGGTATGAGGCAGGGTGGGATAACTGTTTTTAACTGTT
CTTTTTAAAACTTGACATCATGGCGTGATGCCAACAATATGTGAACGTCTCTTGTCAAAG
GAAGAATAATGAATAAATCTTTATCCAGTTCGGTAGAAGAATACCGCGAGCTGACGCTCC
GAGGCATGATACTCGGTGCATTGATCACTGTAATTTTTACTGCGTCCAATGTTTACCTCG
GTTTGAAAGTCGGGCTGACCTTTGCCTCGTCGATTCCGGCGGCGGTGATTTCGATGGCGG
TTTTAAAGTTTTTCAAAGGCAGCAATATTTTGGAAAACAACATGGTGCAGACCCAAGCCT
CGGCTGCGGGTACGCTTTCGACCATCATCTTCGTCCTGCCCGGTTTGCTGATGGCGGGCT
ACTGGAGCGGTTTCCCGTTCTGGCAGACGACGCTTTTATGTATTGCCGGCGGGATTTTGG
GGGTGATTTTCACCATTCCTCTGCGTTACGCAATGGTGGTGAAAAGCGATTTGCCTTATC
CGGAAGGTGTGGCGGCTGCTGAAATTTTGAAAGTGGGCGGTCATGAAGAAGGGGATAACC
GTCAGGGCGGCAGCGGCATCAAAGAGCTGGCGGCCGGCGGTGCGTTGGCGGGATTGATGA
GCTTTTGCGCCGGAGGTCTGCGCGTGATTGCCGACAGCGCGAGTTATTGGTTTAAAAGCG
GTACGGCGATTTTCCAGCTGCCGATGGGCTTTTCACTGGCATTGTTGGGCGCGGGCTATT
TGGTCGGACTGACGGGCGGTATCGCCATCCTGTTGGGCATTTCGATTGCTTGGGGCATTG
CCGTGCCGTATTTCTCCTCACACATTCCGCAACCTTCCGATATGGAAATGGCGGCGTTTG
CGATGAAGCTGTGGAAGGAGAAAGTGCGTTTTATCGGTGCGGGGACTATTGGCATTGCGG
CGGTTTGGACGCTGTTGATGCTGCTCAAGCCGATGGTGGAAGGCATGAAGATGTCGTTCA
AGAGTTTTGGCGGCGGTGCGCCCGCTGCGGAACGCGCCGAACAGGATTTGTCGCCTAAGG
CTATGATTTTTTGGGTGCTGGCGATGATGTTTGTTTTAGGCGTGTCGTTTTACCACTTTA
TCGGCGATTCGCACATTACGGGCGGCATGGCTTGGCTTTTGGTGGTCGTTTGCACGCTTT
TGGCTTCCGTCATCGGCTTTTTGGTCGCCGCCGCCTGCGGTTATATGGCAGGTTTGGTCG
GCTCGTCTTCCAGCCCGATTTCCGGCGTGGGCATCGTGTCCGTCGTCGTTATTTCACTGG
TTTTGCTGCTGGTAGGCGAATCCGGAGGTTTGTTGGCGGATGAGGCTAACCGCAAATTTT
TGCTGGCACTGACTTTGTTTTGCGGCTCGGCAGTAATCTGCGTGGCTTCGATTTCCAATG
ACAACCTGCAAGACTTGAAAACCGGCTACCTGCTCAAAGCCACGCCTTGGCGGCAGCAAG
TCGCCCTGATTATCGGCTGTATCGTTGGTGCGCTGGTTATTTCGCCCGTGTTGGAACTGC
TTTACGAAGCCTACGGCTTTACCGGCGCAATGCCGCGCGAAGGCATGGACGCGGCGCAGG
CTTTGGCAGCCCCTCAAGCGACTTTGATGACGACCATCGCGTCGGGCATTTTCGCCCACA
ACCTTGAATGGGTCTATATCTTTACCGGTATCGTGATTGGAGCAGTATTAATCGTCGTCG
ATTTGGTGTTGAAAAAAATCATCAGGCGGCAAACTTGCCCTGCCCGTCCTTGCGGTCGGTA
TGGGTATTTATCTGCCGCCGTCCGTCAATATGCCCATCGTGGCAGGCGCGGTGTTGGCGG
CGGTGTTGAAACACATCATCGGTAAAAAAGCGGAAAACCGCGAAGGCCGTCTGAAAAACG
CCGAGCGCATCGGAACCTTGTTCTCCGCCGGCCTGATTGTCGGTGAAAGCCTGATCGGTG
TGATTATGGCGTTTATTATTGCCTTCTCCGTGACCAACGGCGGCTCGGATGCGCCGCTCG
CGTTGAATCTGCAAAACTGGGATGCCGCCGCTTCTTGGCTGGGTTTGGCGTTCTTCGTTA
CCGGGATGTTTTTCTTTGCACAGCGCGTACTGAAGGCGGGCAAGTAGGCTGTCGGAAAAA
ATGCCGTCTGAAACGTTCAGACGGCATTTTTTATCGGTAAAGCGGAAGGCGGAGCTTTTC
GGCTTGCGCCCACGTTTGCCGGCAAGGTCTTTGGGCGACAGCAGCGGCGCGGTTTGAAG
CGGCCAGCCTATGCCGACTGTCGGGTCGTTCCATATTAAAACCTGTTCGGCTTCAGGCTT
GTAATAGTCCGTGCATTTATAGACGAACTCGGCTTCATCGCTCAGTACATAGAAGCCGTG
TGCGAAACCTTCGGGTACCCACAGTTGGCGTTTGTTTTCTGCGGACAGAATTTCGCCTAC
CCATTTGCCGAAAGTGGGGGAGTCTTTACGCATATCGACGGCCACGTCGAATACTTCGCC
GACAACCACGCGTACGAGTTTGCCTTGTGTGTTTTCAGTTTGATAGTGCAGGCCGCGCAA
TACGCCTTTGCCGGATTTGGAGTGGTTTTCCTGCACGAAGGTGCGTTCGCAGACTTGGGT
TTTAAACCACTCGTCGCGGAAGGTTTCCATAAAAAAGCCGCGCGCGTCGCCGAAGACTTG
GGGCTCAAGCAGTTTTACGTCAGGAATGGCGGTATCAATGATGTTCATCTTTTTATCTTT
CATCTAAAGGCCGTCTGAAAAGTTTCAGACGGCCTCAAACATTATTTTTTCAACAGGCGC
AGCAAATATTGGCCGTATTGGTTTTTCGCCATCGGGCGCGCCAATTCTTCCAGTTTTTCA
TCGGAAAGCCAACCGTTGCGCCAAGCGATTTCTTCGAGGCAGGCGATGTGCAGGTTTTGG
ATATTTTGCACGGTTTGGACGAATGAAGCGGCTTCGTGCAGGCTCTCGTGGGTGCCGGTG
TCCAGCCACGCGAAACCGCGTCCCAATATTTGAACGGAGAGCGAGCCGTCTTCCAAATAC
ATCCGGTTGAGGTCGGTAATTTCCAATTCGCCGCGTGCGGACGGTTTGAGCTGTTTGGCG
AACTCGACGGCGCGGTTGTCGTAGAAATACAAGCCGGTTACCGCCCAATCGGATTTGGGC
CGTTGCGGTTTTTCTTCGATGGAAACGGCGCGGAAGTTTTCGTTAAATTCAACCACGCCG

AAACGTTCGGGGTTTTGACCTGATAAGCAAACACGGTTGCGCCGTGCGTTTGCGCTGCC
GCCTGTTTCAATGTTTGCGTAAACGACTGACCGTAAAAAATATTGTCGCCCAAAACCAAG
CAAACATTGTCGTTGCCGATAAATTCTTCGCCGATGATAAATGCCTGTGCCAAGCCGTCC
GGACTGGGTTGCACGGCATAACTGATGGAAATGCCGAAATCGCTGCCCTCGCCAAGCAGG
CGTTTGAAAGAGGCGTTGTCTTCAGGCGCGGTAATCACCAAAATATCGCGGATTCCCGCC
AGCATCAAAACCGACAAGGGGTAATAAATCATCGGTTTGTCGTACACGGGCAGGAGCTGT
TTGGATACGCCGCGCGTGATGGGGTAGAGGCGCGTGCCGCTGCCGCCTGCCAGTATGATG
CCTTTCATCTTTTCTTTCTTCCTTTGCGATGGGTTTTCAGACGGCATTGCGTCGGGATGC
CGTCTGAAAACTATTTTCCAGTACCTAAACGTTCCAAACGATAGCTGCCGTTCAATACAT
TTTGCCACCAGGTTTTGTTCTCCAGATACCATTGCACGGTTTTGCGGAGGCCGGACTCGA
AGGTTTCCAAAGGCAGCCAGCCCAAATCCCGCCTGATTTTGGCTGCGTCGACGGCGTAGC
GTACGTCATGGCCGGGGCGGTCTTGTACGAAAGTAATCAAATCTTCATAACGCGCCACAC
CGGCCGGTTTTTCGGGAGCGAGTTCTTCCAGCAGGGCGCAGATGGTTTTGACGACTTCAA
TATTGGCTTTTTCATTGTGGCCGCCGATATTGTAGGTTTCGCCGACAACACCTTCGGTAA
CAACCTGATACAGTGCGCGCGCGTGGTCTTCGACAAACAGCCAGTCGCGGATTTGCATAC
CGTCGCCGTACACAGGCAGCGGTTTGCCGTCAAGCGCGTTCAGAATCATCAAAGGAATGA
GTTTTTCCGGAAAATGGTAAGGACCGTAGTTGTTGGAGCAGTTGGTTACAATGGTCGGCA
AGCCGTAAGTACGCAACCACGCGCGGACGAGGTGGTCGCTGGACGCTTTAGAGGCAGAGT
AGGGGCTGGACGGCGCGTAGGGCGCGGTTTCGGTAAACAAATCGTCCGTGCCGCCTAAAT
CGCCATAGACTTCATCGGTGGAAATATGGTGGAAACGGAAGGCTTCGTGCTGTTCAGACG
GCATTTGTTGCCAGTAGGCGCGGGCTGCTTCAAGCAGATTGAATGTGCCGACGATATTGG
TTTGGATAAACTCGCCTGCCGAACCGATAGAGCGGTCGACATGGCTTTCCGCCGCCAAGT
GCATCACGGCATCAGGCCGGTATTGCGCGAATACGCGGTCGAGTTCGGCGCGGTCGCAAA
TATCCACTTGTTCAAAAGCATAGCGAGGATTATCGGCTACCTCAGTCAAAGATTCCAAAT
TGCCGGCATAAGTCAGCTTATCGACATTGACGACAGCGTCCCGGGTGTTTCGGATAATAT
GACGGACAACGGCAGAACCGATAAAGCCCGCGCCGCCGGTAACAAGGATTTTTCTCATAA
ATTTCAGAGGATAGCCAAAAAATATAAACAGATTATAGCAGACAGAATGTGTGTTTTTCA
GATAAAGAGGCCGTCTGAAAACATCTCTTTCAGACGGCCTGTATCAGGTCAACTTAATCG
TCGTAGCCATTCGGATTATTACTCACCCAGCGCCATGAGTCTTCCATCATTTGGGTTAAA
TCACGCTGGGTTTGCCAGCCGATTTGCGCCTTTGTATAGGAAGGGTCGGCATAGAAGCAC
GCCAAATCACCGGCACGGCGCGGTTTGACTTCATACCGAATCGTCAAACCCGAAGCTGCT
TCAAATGCGCGGATGATTTCCAACACCGAAGAAGCGCGGCCGGAGCCTAAGTTCAGCAAA
TGCGTGCCTGCTACATTACTTTTTGCCTGCATAGCCGCGACATGGCCTTCTGCCAAATCC
ATCACATGAATATAGTCACGCATCCCCGTGCCGTCGGGGGTAGGGTAGTCATCGCCAAAT
ACCGCCAATTGCGGCAGTTTGCCTGCCGCCACTTGGCAGATATAAGGCAACAAATTATTC
GGGATGCCGTTTGGCTGCTCGCCAATCAAGCCGCTTTCATCCGCGCCAATCGGATTGAAA
TAACGCAACAAAATCATGCTCCAGCGCGGATCGGCTTTTTGAATGTCAGTGAGAATGCGC
TCAACCATCGATTTCGATGCGCCGTAAGGGCTGGTGGTGTCGCCCGGTGGCATATCCTCG
GTATAAGGCACTTTGCCCGGATCGCCATAAACCGTCGCCGAAGAACTGAACACAATGCTA
AACACGCCCGCACGCGCCATTTCTTCCGCCAACACCAAGCTGCCGGAAACATTATTATCA
TAATATTTCATCGGCTCGGCCACACTTTCACCCACCGCTTTCAAGCCGGCAAAATGAATC
ACCGAATCAATGCGGTTTTCCGCAAAAATACGGCGCAAAATCTCACGATCGCGGATATCG
CCTTGATAAAACGGAATCTCTTGGCCGGTAATCGTTTTCAAGCGTGGCAGGATATTGATG
CTGGAATTGCATAGGTTATCCAAAATCACGACTTGATGGCCGCTTTTCAGCAAAGAAACA
ACGGTATGCGAGCCGATAAAACCGGTGCCGCCGGTAACGAGAATTTTTTTCATAGAATAA
AATACTAAAAATACTTTGATAGATTGATAATAATGGTTGTAAAATCTTAATGAAATAATT
ATCCCTGAAGTAGCAGTAGATTTCTTCAGATTTTTTTGGTTAAGTATATTTGATATCTAA
GGTAAAATACTATAATTTTATTCATATCGTGTAGAATTAAGCGAAAATAGTGAAAAAAGT
ATTACTAATTGCCAGTTATGACTCGTTCCTTAACTCGGGCTATGCTGTTGCAAAAGAGAT
AAAAGATGCTCAAATTGATATTTATATCCACAAAAGTCGAGAAAACATTCTTTCAAATCG
ACAGTTATTAGAATCAGGGATAGATAAAGACCAAGCAATTTTTTTTTCATATTGATGAT
TACTTTATTAAGAATATGCATCAATATTATGACGCAGTAATTTTATCGGTTGGAAATGGG
TTGTTAAAAAGGTTCTTTAAGCAGAATGCGCAATTAAATATTGCTTCAAGGCCATTGATT
ATTACCTTGTTTCCAGGTCTAGTATTCGGTGATCAGGCAACTATTCTATCTCGTATGGGG
GCTGATATTGTTTTATATAATAATAAGCATGATTTTAGAATTGCAGAGGAATATAAGAAA
CAATATAAATTAAGTTGTCAAAATATACTTTATGGTTATCCAATTTTTCGCCATGCTTCG
AAAGGTTGTCATGGAGAGAAAATTTACTTTATTGACCAAGTTAAAATCCCATTTAAAAAA
GAAGAAAGAATTTATACATTAAAAAAATTGATTGCCTTGGCTGAAAAATACCCTGAGAAA
GAATTTACTATTTTGCTAAGGGTTGCACATAAAGATATTACTGTGCATCAGGATAAACAT
TCGTATATAGAGCTGGCAAAGCAGTTTCAGTTGCCGAGTAATTTGACAATAGAGCGAAAA
AGTACCGCGCAAGCCTTCCAAGAAATGGGGTATTGTTTATCTTATTCATCTACTATGCTT
TTTGAAGCTGAATGTAAGGGTATCCCTGTTGGTGTTGTTGCAGACTTAGGCTTTTCTAAA
TCCTATGCAAATCAGCATTTTTTAGGTAGTGGGGTTTTAGTTTATTTTGATCAAATAGAT
TTCACTTCCCCAAAAATAGCAGATCCGGATTGGCTTGATTGCTATGCTACTAAAAAGGTG
ATTACAACTGATGAGTTTAATAAGCTATTAAAGCAGGTTGTGCCATTGCAACATGATTAC
CAAGAATATTTATCTGCAGGAATTCGATATCAAGCTTTGGCTAACACACACGCCATTCCA
ACCAATAGTTTTCTCGGCATAAAGCCATGCTCTGACGCTTAAATGCACTAATGCCTTAAA
AAAACATTAAAGTCTAACACACTAGACTTATTTACTTCGTAATTAAGTCGTTAAACCGTG
TGCTCTACGACCAAAAGTATAAAACCTTTAAGAACTTTCTTTTTTCTTGTAAAAAAAGAA
ACTAGATAAATCTCTCATATCTTTTATTCAATAATCGCATCAGATTGCAGTATAAATTTA
ACGATCACTCATCATGTTCATATTTATCAGAGCTCGTGCTATAATTATACTAATTTTATA
AGGAGGAAAAAAATAAAGAGGGTTATAATGAACGAGAAAAATATAAAACACAGTCAAAACT
TTATTACTTCAAAACATAATATAGATAAAATAATGACAAATATAAGATTAAATGAACATG
ATAATATGTTTGAAATCGGCTCAGGAAAAGGGCATTTTACCCTTGAATTAGTACAGAGGT
GTAATTTCGTAACTGCCATTGAAATAGACCATAAATTATGCAAAACTACAGAAAATAAAC

TTGTTGATCAGGATAATTTCCAAGTTTTAAACAAGGATATATTGCAGTTTAAATTTCCTA
AAAACCAATCCTATAAAATATTTGGTAATATACCTTATAACATAAGTACGGATATAATAC
GCAAAATTGTTTTTGATAGTATAGCTGATGAGATTTATTTAATCGTGGAATACGGGTTTG
CTAAAAGATTATTAAATACAAAACGCTCATTGGCATTATTTTTAATGGCAGAAGTTGATA
TTTCTATATTAAGTATGGTTCCAAGAGAATATTTTCATCCTAAACCTAAAGTGAATAGCT
CACTTATCAGATTAAATAGAAAAAAATCAAGAATATCACACAAAGATAAACAGAAGTATA
ATTATTTCGTTATGAAATGGGTTAACAAAGAATACAAGAAAATATTTACAAAAAATCAAT
TTAACAATTCCTTAAAACATGCAGGAATTGACGATTTAAACAATATTAGCTTTGAAGAAT
TCTTATCTCTTTTCAATAGCTATAAATTATTTAATAAGTAAGTTAAGGGATGCATAAACT
GCATCCCTTAACTTGTTTTTCGTGTACCTATTTTTTGTGAATCGATACCGTCGACCTCGA
GGGGGGGCCCGGTACCCAATTCGCCCTATAGTGAGTCGTATTACGCGCGCTCACTGGCCG
TCGTTTTACAACGTCGTGACTGGGAAAACCCTGGCGTTACCCAACTTAATCGCCTTGCAG
CACATCCCCCTTTCGCCAGGCAAAAAACCGGTTATATTTTTTTGCATTAAATATTTTTTT
AGCATATTCAGGAAAGGGGACATGCAATATGTCAAAATGATCTATATATCCTTTAATATT
AAGATTATTTCCAATCAAATAACGTTCTAATTTTGTTGGATGATATGAAAATGATTCTAA
TAAAGGAGCATATGTTCCAGTCCCTTCATCAATTAAATGAGTCGTAATATTCTTTTTTTT
TGCAATACTAATCAGATAGGAGTAGTGGCCTGTAAAAGACAGCATATAGAGATGAGCAGG
CTGTATAATATTAAGGATTTTTTTGTAACTTCTATAAATATAAAGTAATTTTTTAGGAGT
TATATTATTAGGGCTTCTAGGAAGCTCAAATAGATAAATAGATTCAAATAGATTCTTGTT
AGCTGATTGATGAACTAACTTAGGCATTTTTAAGTTTTTAGAAGTATATAAAATTACTAG
TAAATTATTGGTTAATTTTTGTATTTTAATTAGGCTTTGGACTTGGTTAAGCTGACCTAA
ATTAGATATGACAAATAAATTGTTACGTGGGGGGGTAAGATAAAATGGAGATGTTGTCAA
CCACATTGAATCTTGAAAAAACTTTTTAGGCTGAAAAAGAGCTTTTTTTATTTTCTTTAG
CATTATTGTATCTCTTAAAAATTAATGAGAATTAGCTATATGTAATAGCCAATCCTCTGT
TAATAAAGTAACTAAGTTAATAAGCATTATTCAATATCAGTTTTTTTGATTTGAGCACCT
TTGCGAATATTGCAAGCAGCGACCTTACCAAATAATGTTTCATATTCGTTGACGCTGAAG
TCTCCATTGCCTGGGCGTTTAACGCATAGGTTATCTCGGGACAACAGTTCTGGTTTTTTA
ATGTCTTTATCTGCTACGACAGATGCAAAGGCGAAATCTTTAGTTGGCTTTTCTCCCGCG
ATAATCGTGTCTTTTTTGCCGCCGCGTGCCAATTTTAAAGCATGAGCGCCTTGCTTGAGC
TCTTTAAAAGTATCCGGATTCATAGAGCATACAATATCCGGACCTGGGCGATCCATGCGG
TCAGTAAAGTGACGCTCTAAAATCGAACCGCCTAAAGCTACTGCTCCTAAGCAAGCATAG
TTATCTAAGGTATGGTCAGACAGGCCAATGATTGCGTCTGGAAAGGCTTCAGATAAATCG
TTCATACCAGCCAATCGAACATCTTCGTAAGGGGTTGGGTAGATGTTGGTACAGTGAAGC
AAAGCATAAGGTACCCCTGCTTCTCGAATAATTTCTACCGACTTTTTGATGCTTTCAATA
GAATTCATGCCGGTAGAGAGAATAATAGGCTTACCAAAAGAGGCCACCAGTTTAATTAAT
GGGTAGTTATTACATTCGCCAGAGCCGATTTTATATGCTGGAATATCCATACGTTGTAAT
CGTAAAGCAGCTGCACGAGAGAAAGGAGTACTGATAAAAATCATACCCTTACTCTCTACG
TATTCTTTTAATTTAATCTCATCTTCTTCATTCAGGGCGCAACGTTCCATAATTTCATAA
ATAGAGACATCTGCATTGCCTGGAATGAGTTGTTTGGCCTCATCAGACATTTCGTCTTCA
ACGATGTGTGTTTGATGTTTAACAACTTGAGCGCCTGCATTATAGGCAGCATCAACCATT
TCAAAAGCTGTTTTTAAAGAGCGTTCATGATTGATGCCGATTTCACAGATAATCAATGGT
TCGTGGTTGTAACCTACTGAACGATTACCAATTTTAAATTCGTTGTTGTTTTGCATTTAG
CTTTCCTTGTGATTAAGAATGTTTTCTGCCTGTTGTAAATCAAGCTCAGTATCAATATCG
ATAGAGTCTTGATGAGACATAATATAAAGTTTGGTTGGGGCGATAAAAAAACAATTATTT
GCAATTAGTGAAGCAGTATCATTAATGTAAATTGGACCATTAGGCCTAAATGCCTGAGGT
AATTGTTGGCGAGGCTGGTCCAAATCGCTTAGATGGCGCATGGGGGCATATTCGCCATTA
TTGATTTGAAGCAGCGTTTTTAGTGGATGATCCTCCATTGGGCATGCAGAGACAACGGAT
CCTTTTATTTTCTCATCAAATAGAGAAAAAGCTTCACGAATATGAGCCCCTGTGCGTAAT
GGACTGGTTGGTTGTAATAGGGTTACTGTGCCGGAATTACTGCCAATTGTTTCTAAAGCA
TGTATTACACCTGAAATAGAGCTGGCTGTATCGGAGGCCAGCTCTGCAGGGCGTAGGACG
ACTTCGACACCGAAATTTTTAGCTTCTTCTGCAATTAACCCGCCATCAGTCGAAACAATT
ATGCGGTCAAAACACTTTGATGATATAGCAGCATTAATTGTATGACCAAGTAATGATATG
CCATTCATTTTCGGGAGATTTTTTAATGGCAATCCTTTGGAGTTTTGGCGCGCAAGTATA
ACCGCAATATTTTGTTTTTCCATAATTTAAAGATTCAAATCGATAAAACGTTTTTGAGCA
GAAACATTCCACGTTTCAGGATTGTTGATTACTTCAGCAAATCTTTCTGTGCTGGTGCGA
GTATCTCCGCCATTAAAGGTATCATCTGCTTCAAATTTGCCTAAACTGCATGCTTGTTGA
ATCGCATCAAAGATATTTTTAGTTTCATAATCTGTATGAATAATAGATTTTCCCATATGG
CGGTTACTTTGGCGTGTACCAACATCAATTGAAGGGACACCGTAGAGAGGAGCTTCTCTA
ATACCTGCACTTGAGTTGCCGACCATAAATTTAGCATGTTTCAATAAGACTAAAAAATAT
TCAAATCGAATGGAAGGAAATGCAATAAATTTATCAGATTGATATTTTAATAATTCTTGC
AGAATACTTTCAGTGCCAGTGTCATTATTAGGGTAGATGCTAATGATATTTTGGCCACTT
AATTCTAATGCTTTGAAATATTGGGCCGCATATTGTGGCATTAAATGTGCTTCTGTAGTC
ACGGGGTGAAACATAGAAATACCATAATTTTCGTATGGTAAACCGTAATATTCTTTGACT
TCTTCTAAGGATGGGAGGGTGGAAGAGGGCATAACATCTAAATCGGGGGAGGCGATGATG
TGAATATGCTTTCTTTTTTCTGCCATTTGCACTAGGCGAGTGACAGCTTGTTCATTTGCT
ACCAAGTGGATATGAGAAAGTTTACTAATAGAATGACGAATGGAGTCATCTACTGTACCA
GATAGTTCACCACCTTCGATATGGCAAACTAAACGGCTGCTTAATGCACCTACAGCTGCG
CCTGCTAGTGCTTCTAAACGGTCGCCGTGAATCATGACCATATCAGGTTCAATTTCATCA
GATAGACGAGAGATAAACGTAATGGTATTGCCTAAAACGGCACCCATTGGTTCACCTTGG
ATTTGATTTGAAAACAGATATGTATGTTGATAGTTTTCTCGAGTTACTTCCTTGTAGGTT
CTGCCATATGTTTTCATCATATGCATACGAGTTACAATCAAATGCAATTGAAGGTCTGGG
TGATTTTCAATATAGGCTAATAAAGGTTTTAGCTTGCCGAAGTCGGCTCTGGTAGGTGTA
ATGCAAAGAATTCTTTTCATGATTTTAGAATCTATAAGTATATAAGTATAAGGAAGTTGG
AAAGAAGAATACTAATTATACTCTACGTACTCATAAATTTATTTCGATTAAGTGCTATAA
TTAGGCCATTTATAATTATATTAGGATTTGGCTTGTGTTTAAAGTGAAATTTTATATTCG

TCACGCAGTATTATTATTGTGTGGAAGTTTAATTGTAGGATGCTCTGCGATTCCTTCATC
AGGCCCCAGCGCAAAAAAAATTGTCTCTTTAGGGCAACAATCTGAAGTTCAAATTCCTGA
AGTGGAGCTGATTGATGTGAATCATACGGTTGCTCAGTTATTATATAAGGCTCAGATAAA
TCAGTCATTCACTCAGTTTGGCGATGGTTATGCTTCGGCTGGTACGCTAAATATTGGTGA
TGTATTGGATATTATGATTTGGGAAGCGCCGCCGGCAGTATTGTTTGGTGGTGGCCTTTC
TTCGATGGGCTCGGGTAGTGCGCATCAAACTAAGTTGCCAGAGCAGTTGGTCACGGCACG
TGGTACGGTTTCTGTGCCGTTTGTTGGCGATATTTCGGTGGTCGGTAAAACGCCTGGTCA
GGTTCAGGAAATTATTAAAGGCCGCCTGAAAAAAATGGCCAATCAGCCACAAGTGATGGT
GCGTTTGGTGCAGAATAATGCGGCGAATGTGTCGGTGATTCGTGCTGGGAATAGTGTGCG
TATGCCGCTGACGGCAGCCGGTGAGCGTGTGTTGGATGCGGTGGCTGCGGTAGGTGGTTC
AACGGCAAATGTGCAGGATACGAATGTGCAGCTGACACGTGGCAATGTAGTACGAACTGT
TGCCTTGGAAGATTTAGTTGCAAATCCGCGACAAAATATTTTGCTGCGTCGCGGTGATGT
GGTTACCATGATTACCAATCCCTATACCTTTACGTCTATGGGTGCGGTGGGGAGAACACA
AGAAATCGGTTTTTCAGCCAGAGGCTTATCGCTTTCTGAAGCCATTGGCCGTATGGGCGG
TTTGCAAGATCGCCGTTCTGATGCGCGTGGTGTGTTTGTGTTCCGCTATACGCCATTGGT
GGAATTGCCGGCAGAACGTCAGGATAAATGGATTGCTCAAGGTTATGGCAGTGAGGCAGA
GATTCCAACGGTATATCGTGTGAATATGGCTGATGCGCATTCGCTATTTTCTATGCAGCG
CTTTCCTGTGAAGAATAAAGATGTATTGTATGTGTCGAATGCGCCGTTGGCTGAAGTGCA
GAAATTTTTGTCGTTTGTGTTCTCGCCGGTTACCAGTGGCGCGAACAGTATTAATAATTT
AACTAATTAATGTGAGTAATTAAGATGTCTGAGCAACTTCCTGTGGCAGTTGCCACTGAA
ACCAAAGCCGAGCGTAAAAAGCCGAAAAAGAAAAGTTGGATTAAAAAGCTAAGCCCTTTA
TTTTGGGTAACGGTGATTATCCCTACGGTAATTTCGTTGGTGTATTTCGGCTTCTTCGCT
TCCGATCGTTTTACGTCGCAATCGAGCTTTGTGGTGCGCTCGCCTAAAAGCCAATCTTCT
CTCAATGGCCTGGGTGCCATTTTGCAGGGCACAGGTTTTGCCCGTGCGCAAGATGATATT
TACACGGTTGGGGAGTATATGCGTTCGCGCTCGTCTTTGGATGAACTGCGTAAAATCTTG
CCGGTGCGTGAGTTTTATGAAACCAAAGGTGATGCGTTCAGCCGCTTTAATGGGTTTGGG
TTCCGTGGCGAGGAAGAGGCTTTTTATCAATACTATAAAAATCAGGTGATGATCAATTTT
GATACGGTTTCGGGTATTTCCACGTTGAATGTAACTTCCTTTGATGCGCTGGAATCTAAG
AAAATCAATGAGGCTTTGTTAAAACAAGGTGAAGCATTGATTAACCAGTTGAACGATCGT
GCACGTGCTGATACGGTGCGCTATGCGGAAGAAGTAGTGAAAACGGCGGCAGAGCGGGTA
AAGGAAGCCTCTCAGAATCTGACGGATTACCGGATTGCCAATGGCGTTTTTGATTTGAAA
GCGCAATCGGAAGTGCAAATGGGGTTGGTTTCCAAGCTGCAAGATGAATTGATTGTGATT
CAAACCCAGCTGGATCAGGTGAAAGCAGTCACTCCGGAGAATCCGCAGATTCCGGGTTTG
CAGGCGCGTGAGCAGAGCTTGCGTAAAGAAATTGACCAACAGTTACGTGCCATTTCGGGC
GGTGGGCATTCTTCGTTGTCTAATCAGGCTGCCGAATATCAGCGTGTGTATTTGGAAAAC
CAGTTGGCAGAGCAGCAGTTGGCAGCCGCCATGACTTCTTTGGAAAGTGCCAAGGTTGAA
GCAGACCGTCAGCAGCTTTATTTGGAAGTGATCTCGCAACCGAGCCTGCCGGATTTGGCA
CATGAGCCTAAACGGTTATACAACATTGTTGCCACTCTGATTATCGGCTTGATGGTTTAT
GGTATTTTGAGCCTGTTGACTGCCAGCATTCGTGAGCATAAAAACTGATGAAAGCCTTGC
ATAAAACATCATTTTGGGAATCTTTAGCCATTCAAAGGCGCGTAATCGGTGCGCTGTTGA
TGCGGGAAATTATCACCCGTTACGGTCGCAATAATATTGGCTTTTTATGGCTGTTTGTTG
AGCCGTTGCTGATGACATTCGTTATCGTCTTGATGTGGAAATTTTTAAGGGCAGACCGAT
ATTCAACTTTGAATATTGTCGCATTTGCGATTACTGGCTATCCGATGTTGATGATGTGGC
GTAATGCCTCAAAACGGGCAGTTGGGTCGATTTCTTCAAATGCCAGCTTGCTTTATCACC
GCAATGTAAGAGTTTTGGATACCATCTTGGCGCGCATGATTTTGGAAATTGCTGGTGCAA
CCATTGCGCAGATTGTGATTATGGCGGTATTGATTGCGATTGGCTGGATTGAAATGCCGG
CAGATATGTTTTATATGCTGATGGCTTGGCTTTTGATGGCTTTTTTTGCGATTGGTTTGG
GTTTGGTGATTTGTTCGATTGCCTTTAATTTCGAGCCGTTTGGCAAGATTTGGGGCACAT
TGACTTTTGTGATGATGCCGTTATCCGGTGCGTTCTTTTTTGTGCATAATTTGCCGCCCA
AGGTACAAGAATATGCATTAATGATTCCGATGGTGCATGGCACAGAAATGTTCCGTGCCG
GATATTTTGGCAGCGATGTAATTACCTATGAAAATCCTTGGTATATCGTATTGTGCAATC
TGGTGTTGTTGTTGTTTGGCTTGGCGATGGTCAGTAAATTCAGTAAAGGAGTCGAGCCGC
AATGATTTCAGTTGAACACGTTTCCAAACGCTATCTGACCCGCCAAGGTTGGCGGACAGT
CTTGCACGATATTAGCTTCAAAATGGAGAAGGGCGAGAAAATCGGTATTCTCGGCCGCAA
CGGTGCAGGTAAATCGACGCTCATCCGTTTGATCAGTGGCGTTGAGCCGCCGACCACGGG
TGAAATCAAGCGGACAATGAGTATTTCTTGGCCTTTGGCATTCTCCGGTGCGTTTCAAGG
CAGTCTGACCGGTATGGACAATTTGCGTTTCATCTGCCGGATTTACAATGTCGATATCGA
TTATGTGAAAGCGTTTACGGAAGAATTTTCGGAGCTGGGGCAATATTTGTATGAGCCGGT
GAAACGCTATTCTTCAGGTATGAAAGCGCGTTTGGCTTTTGCGCTGTCGTTGGCGGTGGA
GTTTGACTGTTACCTGATTGACGAAGTGATTGCAGTTGGTGACTCGCGTTTTGCCGATAA
ATGTAAGTACGAGTTGTTTGAAAAGCGCAAAGACCGTTCCATCATCTTGGTGTCGCACAG
CCACAGCGCCATGAAGCAATATTGCGATAATGCGATGGTGCTGGAAAAAGGGCATATGTA
CCAGTTTGAAGATATGGACAAAGCCTACGAATATTATAATTCGCTGCCTTAAAGCGATTG
TTTTTAAATCAGGCCGTCTGAAATTTCAGACGGCCTGTCCGTTGGAATTCTATTGATGAA
CATTACTCAAATTCTTTCCCAAGAACTCTCCGCGACTGCCGCGCAAATCACCGCCGCCGT
CGAGCTTTTGGACGACGGCGCGACCGTGCCGTTTATCGCCCGCTACCGCAAGGAAGCGAC
GGGCGGGTTGGACGATACGCAGTTGCGCCGGCTTGCCGAGCGGCTGCAATATCTGCGCGA
GTTGGAAGAGCGCAAAGCCGTTGTTTTAAAAAGCATTGAAGAGCAAGGCAAGCTTTCAGA
CGACCTCAGGGCGCAAATCGAAGCCGCCGATAACAAAACCGCGCTGGAAGACCTGTATCT
GCCCTACAAACCCAAACGCCGCACCAAAGCGCAAATCGCGCGCGAACACGGTTTGCAGCC
GCTGGCGGACGTGTTGCTTGCCGAGCAGTCGCAGGACGTGGAAGCCGCCGCACAAGGCTA
CCTGAACGAAAACGTCCCCGATGCCAAAGCCGCGTTGGACGGCGCGCGTGCGATTCTGAT
GGAGCAGTTTGCCGAAGACGCGGAACTTATCGGCACGCTGCGCGACAAGCTGTGGAACGA
AGCCGAAATCCACGCGCAAGTCGTTGAAGGCAAAGAAACCGAAGGCGAAAAAATTCAGCGA
TTATTTCGACCACCGCGAACCCGTCCGCACTATGCCCAGCCACCGCGCGCTGGCGGTTTT

GCGCGGCCGCAACGAAGGCGTGTTGAACATCGCGCTCAAATACCAGCCCGACGACACGCC
GATTACCCGGCAAAGCGAATACGAGCAAATCATCGCCTGCCGCTTCAAGGTTTCAGACGG
CCACAAATGGCTGCGCGATACCGTGCGTCTGACTTGGCGCGCGAAAATCTTTTTGTCGTT
GGAACTTGAAGCCCTAGGCCGTCTGAAAGAAGCCGCCGACACCGACGCGATTACCGTGTT
CGCCCGCAATCTCAAAGACTTGCTGCTCGTCGCGCCCGCCGGACGGCTGACCACGCTGGG
TCTCGACCCCGGCTACCGCAACGGCGTGAAATGCGCCGTGGTGGACGACACCGGCAAGCT
GCTGGATACCGTCATCGTCTATTTGCATCAAGAAAACAATATGTTGGCAACGCTGTCGCG
CCTGATTAAGCAACACGGCGTGAAGCTCATCGCCATCGGCAACGGCACCGCCAGCCGCGA
AACCGACAAAATCGCGGGCGAACTGGTGCGCGGAATGCCGGAAATGGGGCTGCACAAAAT
CGTCGTGTCCGAAGCCGGCGCGTCGATTTATTCCGCGTCCGAACTGGCGGCGCGCGAGTT
CCCCGACTTGGACGTTTCCCTGCGCGGCGCGGTGTCCATCGCCCGCAGGCTGCAAGACCC
GCTTGCCGAGTTGGTCAAAATCGACCCTAAATCCATCGGCGTGGGCCAGTATCAGCACGA
TGTGAACCAAAACCAGCTCGCCAAATCGCTGGACGCAGTGGTCGAAGACTGCGTGAACGC
CGTCGGCGTGGACGTGAATACCGCCTCCGCCCCGCTCTTGGCGCGGATTTCCGGCTTGAA
TCAAACCCTTGCCCAAAACATCGTTGCCTACCGCGATGAAAACGGCGCGTTCGACAGCCG
CAAAAAATTGCTGAAAGTACCGCGTTTGGGCGAAAAAACCTTCGAGCAGGCGGCAGGCTT
TTTGCGGATTAACGGCGGTAAAGAGCCGTTGGACGCGAGCGCCGTCCACCCCGAAGCCTA
TCCCGTCGTCGCCAAAATGCTGGCGCAACAAGGCATTAGCGCCGCCGAACTCATCGGCAA
CCGCGAGCGCGTGAAGCAAATCAAAGCGTCCGACTTCACCGACGAACGCTTCGGCCTGCC
GACCATTTTGGACATCCTGTCCGAACTGGAAAAACCCGGCCGTGATCCGCGCGGCGAGTT
TCAGACGGCATCGTTTGCCGAAGGTATCCACGAAATCAGCGACTTGCAAGTCGGTATGAT
ACTCGAAGGCGTGGTTTCCAACGTCGCCAACTTCGGCGCGTTCGTGGACATCGGCGTCCA
TCAGGACGGCTTGGTGCACATCTCCGCCCTGTCCAACAAGTTCGTCCAAGACCCGCGCGA
AGTGGTGAAAGCTGGCGACGTGGTGAAAGTGAAAGTGCTGGAAGTCGATGCTGCACGCAA
ACGCATCGCGCTGACCATGCGCTTGGATGACGAACCGGGCGGCGCAAAACATAAAATGCC
GTCTGAAAACCGCAGCCGCGAACGGACAGCCGGCCGCAAACCCCAACGCAACGACCGCGC
CCCAGCCAATTCGGCGATGGCGGATGCGTTTGCGAAGCTGAAGCGGTAAAATAATCGAAG
AGTTTATGGATTTTGACTTATGCACACACCACTTACCTATATTGACCTTTTCTCAGGAGC
AGGAGGCCTATCCTTGGGTTTTGAACAAGCCGGATTCCAACAATTGCTTTCTGTTGAAAT
GGAGTCTGATTATTGTCAGACTTACCGTACCAACTTCCCCCATCATCAATTACTGCAAAA
AGATTTAACCACACTAACCGAACAAGATTTAATCAATTGTCTTAACGGACAAGCAGTTGA
TTTGATTATTGGAGGACCACCTTGTCAAGGTTTTAGTATGGCAGGAAAGATTGGACGGAC
ATTTACAGATGACCCACGCAACCATTTATTTAAAGAGTTTGTCCGAATAGTTAAAATTGT
CCAACCATATTTTTTGTTATGGAAAATGTAGCGCGACTCTATACACACAATTCAGGTAA
AACACGTATTGAGATTATTCAAGCATTTCAGAATATCGGTTATTCGGTGGAATGTAAGAT
ACTGAGTGCAGCCGATTTCGGTGTTCCTCAGATACGTAGCCGAGTGATATTTATCGGGAG
GAGGGATAAAGGCAAAATTTCCTTTCCCGAACCTTTGCAGATTTCCCATCAGACTGTTGG
ATCAGCAATAGGACATTTTCCAAAACTGGCTGCTGGCGAAAGCAATCCACACGTTGCAAA
TCATGAAGCTATGAATCATTCGGCACAAATGTTAGAAAAAATGGCATTTGTTAAAAATGG
AGGTAACCGTAACGATATTCCTGAACCATTACGTCCGAAAACAGGTGATATCCGTAAATA
CATCCGTTACAACAGCAACAAAACCAGCCGTTTGTATTACAGGAGATATGCGCAAAGTTT
TTCACTATGAACAGAATCGGGCGTTAACCGTTCGTGAATTAGCTGCCTTACAATCTTTCC
CTGATAATTTTATTTTTTGCGGCAGCAAAATTGCCCAGCAGCAGCAGGTTGGTAACGCCG
TACCGCCTTTATTGGCAAAAGCTATTGCTGAAAGTATTTTAAAAATGAGTGAAAATGAAT
AAGCAATATCCGAAAATTAACTATATCGGTAATAAAGAGAAAATAGCTTCCTGGATTTGT
GACCAGCTTCCGTCTGATGTAGATACAGTTGCAGATGTATTTAGTGGAGGCTGTTCCTTT
GCCTACGAAGCCAAAAAACGCGGCTATCGTGTGATTACTAACGATATTTTGGCAATTAAT
TACCAAATTGCTTTAGCATTAATAGAAAACAACCATGAAACATTAAATGACGATGATGTC
GCAATGATTTTTTCAGGCAGCCCGCATGCCGGTTTTATGAGTCAGCGTTATGCCGAAAAA
TTCTATTTTCACGATGAATACCAACAACTTGATTTGTAACGTAAAAATATAGGGAAACTG
GATAACCAGTATAAACGCGCTTTGGCGTTTACTTTAATGCGTCGCGCCATGATACGTAAA
ATGCCCTATACGGAAGATATGCGCCCAGGCGATACCGCTAATCCTTATGGTGCGTCCAAA
GCGATGGTGGAACGGATGTTAACCGACATCCAAAAAGCCGATCCGCGCTGGAGCATGATT
TTGTTGCGTTATTTCAATCCGATTGGCGCGCATGAAAGCGGCTTGATTGGCGAGCAGCCA
AACGGCATCCCGAATAATTTGTTGCCTTATATCTGCCAAGTGGCGGCAGGCAAACTGCCG
CAATTGGCGGTATTTGGCGATGACTACCCTACCCCCGACGGCACGGGGATGCGTGACTAT
ATTCATGTGATGGATTTGGCAGAAGGCCATGTCGCGGCTATGCAGGCAAAAAGTAATGTA
GCAGGCACGCATTTGCTGAACTTAGGCTCCGGCCGCGCTTCTTCGGTGTTGGAAATCATC
CGCGCATTTGAAGCAGCTTCGGGTTTGACGATTCCGTATGAAGTCAAACCGCGCCGTGCC
GGTGATTTGGCGTGCTTCTATGCCGACCCTTCCTATACAAAGGCGCAAATCGGCTGGCAA
ACCCAGCGTGATTTAACCCAAATGATGGAAGACTCATGGCGCTGGGTGAGTAATAATCCG
AATGGCTACGACGATTAAGTTGACCTGATACAGGCCGTCTGAAAGAGATGTTTTCAGACG
GCCTCTTTATCTGAAAAACACACATTCTGTCTGCTATAATCTGTTTATATTTTTTGGCTA
TCCTCTGAAATTTATGAGAAAAATCCTTGTTACCGGCGGCGCGGGCTTTATCGGTTCTGC
CGTTGTCCGTCATATTATCCGAAACACCCGGGACGCTGTCGTCAATGTCGATAAGCTGAC
TTATGCCGGCAATTTGGAATCTTTGACTGAGGTAGCCGATAATCCTCGCTATGCTTTTGA
ACAAGTGGATATTTGCGACCGCGCCGAACTCGACCGCGTATTCGCGCAATACCGGCCTGA
TGCCGTGATGCACTTGGCGGCGGAAAGCCATGTCGACCGCTCTATCGGTTCGGCAGGCGA
GTTTATCCAAACCAATATCGTCGGCACATTCAATCTGCTTGAAGCAGCCCGCGCCTACTG
GCAACAAATGCCGTCTGAACAGCACGAAGCCTTCCGTTTCCACCATATTTCCACCGATGA
AGTCTATGGCGATTTAGGCGGCACGGACGATTTGTTTACCGAAACCGCGCCCTACGCGCC
GTCCAGCCCCTACTCTGCCTCTAAAGCGTCCAGCGACCACCTCGTCCGCGCGTGGTTGCG
TACTTACGGCTTGCCGACCATTGTAACCAACTGCTCCAACAACTACGGTCCTTACCATTT
TCCGGAAAAACTCATTCCTTTGATGATTCTGAACGCGCTTGACGGCAAACCGCTGCCTGT
GTACGGCGACGGTATGCAAATCCGCGACTGGCTGTTTGTCGAAGACCACGCGCGCGCACT

GTATCAGGTTGTTACCGAAGGTGTTGTCGGCGAAACCTACAATATCGGCGGCCACAATGA
AAAAGCCAATATTGAAGTCGTCAAAACCATCTGCGCCCTGCTGGAAGAACTCGCTCCCGA
AAAACCGGCCGGTGTGGCGCGTTATGAAGATTTGATTACTTTCGTACAAGACCGCCCCGG
CCATGACGTACGCTACGCCGTCGACGCAGCCAAAATCAGGCGGGATTTGGGCTGGCTGCC
TTTGGAAACCTTCGAGTCCGGCCTCCGCAAAACCGTGCAATGGTATCTGGACAACAAAAC
CTGGTGGCAAAATGTATTGAACGGCAGCTATCGTTTGGAACGTTTAGGTACTGGAAAATA
GTTTTCAGACGGCATCCCGACGCAATGCCGTCTGAAAACCCATCGCAAAGGAAGAAAGAA
AAGATGAAAGGCATCATACTGGCAGGCGGCAGCGGCACGCGCCTCTACCCCATCACGCGC
GGCGTATCCAAACAGCTCCTGCCCGTGTACGACAAACCGATGATTTATTACCCCTTGTCG
GTTTTGATGCTGGCGGGAATCCGCGATATTTTGGTGATTACCGCGCCTGAAGACAACGCC
TCTTTCAAACGCCTGCTTGGCGACGGCAGCGATTTCGGCATTTCCATCAGTTATGCCGTG
CAACCCAGTCCGGACGGCTTGGCACAGGCATTTATCATCGGCGAAGAATTTATCGGCAAC
GACAATGTTTGCTTGGTTTTGGGCGACAATATTTTTTACGGTCAGTCGTTTACGCAAACA
TTGAAACAGGCGGCAGCGCAAACGCACGGCGCAACCGTGTTTGCTTATCAGGTCAAAAAC
CCCGAACGTTTCGGCGTGGTTGAATTTAACGAAAACTTCCGCGCCGTTTCCATCGAAGAA
AAACCGCAACGGCCCAAATCCGATTGGGCGGTAACCGGCTTGTATTTCTACGACAACCGC
GCCGTCGAGTTCGCCAAACAGCTCAAACCGTCCGCACGCGGCGAATTGGAAATTACCGAC
CTCAACCGGATGTATTTGGAAGACGGCTCGCTCTCCGTTCAAATATTGGGACGCGGTTTC
GCGTGGCTGGACACCGGCACCCACGAGAGCCTGCACGAAGCCGCTTCATTCGTCCAAACC
GTGCAAAATATCCAAAACCTGCACATCGCCTGCCTCGAAGAAATCGCTTGGCGCAACGGT
TGGCTTTCCGATGAAAAACTGGAAGAATTGGCGCGCCCGATGGCGAAAAACCAATACGGC
CAATATTTGCTGCGCCTGTTGAAAAAATAATGTTTGAGGCCGTCTGAAACTTTTCAGACG
GCCTTTAGATGAAAGATAAAAAGATGAACATCATTGATACCGCCATTCCTGACGTAAAAC
TGCTTGAGCCCCAAGTCTTCGGCGACGCGCGCGGCTTTTTTATGGAAACCTTCCGCGACG
AGTGGTTTAAAACCCAAGTCTGCGAACGCACCTTCGTGCAGGAAAACCACTCCAAATCCG
GCAAAGGCGTATTGCGCGGCCTGCACTATCAAACTGAAAACACACAAGGCAAACTCGTAC
GCGTGGTTGTCGGCGAAGTATTCGACGTGGCCGTCGATATGCGTAAAGACTCCCCCACTT
TCGGCAAATGGGTAGGCGAAATTCTGTCCGCAGAAAACAAACGCCAACTGTGGGTACCCG
AAGGTTTCGCACACGGCTTCTATGTACTGAGCGATGAAGCCGAGTTCGTCTATAAATGCA
CAGACTATTACAACCCCAAAGCCGAACACTCGCTGATTTGGAATGATCCGACCGTCGGCA
TCGACTGGCCGTTGCAAGGCGAGCCGAACCTGTCGCCTAAAGACTTGGCAGGCAAAGTAT
TGTCTGAAGCGGTAACGTTTTAAAAATAATTCAGGCCGTCTGAAAGAATGTTCCTCTTTT
CAGACGGCCTACAATCCATTAATAACAATAATCGACGAAAACGCATTGTGAAAAACGCCT
ACATCCCCTCTCGCGGCATCCGCAAAATCCCCCATCTCTCCACCCTATTGCCTGAATTTC
ATATCTGCAAAGACGGGAAAGAAGCAGAGGCTGTTGTCGGCTGGGGTTTGCGCCCGACGA
CACACAAAGCGCGTGCTTTTGCCGCTGAACACCAGCTTCCCTTTATTGCTTTGGAAGACG
GCTTTTTACGATCGCTCGGACTGGGTGTCGCCGGTTATCCGCCCTACTCTATCGTCTATG
ACGACATCGGCATCTACTACGACACCACACGTCCTTCGCGTTTGGAACAACTGATTCTTG
CCGCCGATACCATGCCGTCTGAAACCTTGGCTCAGGCGCAGCAGGCGATGGATTTCATCC
TGCAACACCACCTGTCCAAATACAACCACGCGCCCGAACTTTCAGACGACCATCCTTTAC
GTTCCCCATCCAAACCCGAAACCGTCCTCATCATCGACCAAACCTTCGGCGATATGGCCA
TCCAATATGGCGGCGCAGACGCCTCTACGTTTGAACTGATGTTTCAGACGGCCTTAAATG
AAAACCCGCAAGCCGATATCTGGGTAAAAACCCATCCCGATGTTTTGTGCGGCAAAAAAC
AAGGCTATCTGACCCAACTGGCGCAGCAACACCGCGTCCATCTTTTGGCAGAAGACATCA
ATCCGATTTCTTTGTTGCAAAACGTTGATAAAGTTTATTGCGTTACCTCGCAAATGGGTT
TTGAGGCGCTTTTGTGCGGCAAACCGCTGACCACTTTCGGCCTGCCGTGGTATGCCGGAT
GGGGTGTAAGCGACGACCGCCATCCTGAAATCAACCGCCTTGTTCAAACCCAACGCCGCG
CCACCCGCAACTTGCTGCAGCTCTTCGCCGCAGCCTATCTGCAATACAGCCGCTACCTCA
ACCCCAATACCGGCGAAGCAGGCAGCCTCTTTGATGTCATCGACTATCTGGCGACGGTCA
AACGTAAAAACGACAAATTGCGTGGCGAGTTATATTGCGTCGGTATGTCTTTGTGGAAAC
GCGCGGTTGCCAAACCGTTCTTTAACGTACCCTCTTGCCGTCTGAAATTTATCTCTTCCA
CCCAAAAACTGGCAAGGGTCAAACTGTCCGACGATGCACGCATCCTGGCTTGGGGCAACG
GCAAAGAGGCCATCGTCCGCTTTGCCGAACAACACCACATCCCCCTGCTGCGCATGGAAG
ACGGCTTTATCCGCTCGGTCGGACTCGGCTCCAACTTAGTGCCGCCGCTGTCGCTCGTTA
CCGACGATATGAGCATTTATTTCAATGCCGAAACCCCGTCCCGTCTTGAATACATCCTAC
AAAACCAAAACTTCGACGATCAAGACTTTCAGACGGCCTTGAAGCTGCAAAAAATGCTGA
CCGAAAACCACATCAGTAAATACAACGTCGGCAGCTCAGACTTCACCGCCCCGTCAACCG
ACAAAACCGTGATCCTCGTTCCCGGCCAGGTTGAAGATGATGCGTCTATCCGCTACGGTT
CGCCCCAAATCTACCGCAATCTGGATTTGCTCCGTACCGTACGCGAACGAAACCCCAATG
CCTATATCATCTACAAACCGCATCCCGATGTAGTCAGCGGTAACCGCATCGGCCATATTT
CCCCTGAAGATGCTGCACGATATGCCGACCAAACCGCCGAACAAGCCGACATCCTGACCT
GTCTCCAATACGCAGACGAAATACATACCATGACTTCGCTGACCGGTTTTGAAGCCTTGT
TGCGCGGCAAAAAAGTCAGCTGCTACGGCCTGCCTTTTTACGCAGGCTGGGGGCTTACCC
AAGATCTGCTCCCCATCCCGCGCCGTAGCCGCAGACTTGAGCTTTGGCAGCTGATTGCCG
GCACGCTCATCCACTATCCCGACTACATCCACCCCGAAACCCATCAGGCCATAAATGCAG
AAACCGCAGCCCAAATCCTGATACGACAAAAAAATATGCAAAAAAACAACAACGGATTAC
ATCGCGGGTGCTTTGCCAAAAAATTAGGTAAAATCAAACAACTATATCGATCTTTCAAAT
AAATACCATCAAAGTTAACGATGCGTCATAAACTTGCCTCTATTGCGGCATCATTGCCTT
TGCATCGTTAATTCTCTTGGCGTATGCTTGAAAGTTCAACCTAAAACTATTACATAAAAA
ACAAAACCACATTGCAACATGAAACAGACCGTCCTCAAAAATAACCTGCAAAACCTGCTT
GAAAGCGCAGAAAATATCCTGCTGCTTCAAGGCCCTGTCGGCGATTTTTTTCTGCGCCTT
GCCGACTGGCTGACTGCAAACGGCAAAACCGTACATAAATTCAACTTTAATGCAGGCGAC
GACTATTTTTATCCGCCCACTCAAGCGCATACCGTTGTTTTTAACGACAACTACGATGCC
TTTCCTGAGTTTTTGCAAGAATACATCACTCAACATCACATCCAGGCCGTTGTCTGCTTT
GGCGACACACGCCCTTATCACGTCATTGCAAAACGCATTGCAAACGAAAACCAAGCCAGT

TTCTGGGCGTTTGAAGAAGGCTATTTCCGCCCCTACTACATCACCTTAGAAAAAGACGGC
GTCAACGCATTTTCCCCGTTGCCGCGCCGTGCCGACTTTTTTCTTGAACAATTCCCTAAG
CTTGCCCAGCAAGAATATAAAGCGCCAACGCCGGTACACGGCGGTTTTACGCCCATGGCA
AAAAACGCTATCCGTTACTATATCGAGTTGTTCCGCAATCCACGCAAATACCCCGACTAC
ATCCACCACCGCGCACCCAATGCCGGCCATTACCTCAAACCGTGGTCGCTCTCCATCCTC
AAGCGTTTGAACTACTATATTGAAGACATCCAAATCGCCAAACGTGTGGAAGCAGGCAAA
TACGGCAAGTTTTTTATTGTTCCCTTACAGGTATTCAACGACAGCCAAGTCCGTATCCAT
TGCGACTTTCCCAGCGTCCGCAGCTTCCTGCTCCATGTTTTGAGTTCATTTGCCGAGCAC
GCGCCTGCCGATACCAACATCATCATCAAGCATCATCCGATGGACCGCGGTTTTATCGAC
TACTGGCGCGACATTAAACGCTTTATCAAAGAACACCCCGAACTCAAAGGCCGTGTGATT
TATGTCCATGATGTCCCCCTGCCCGTTTTCCTGCGCCACGGTCTCGGCATGGTCACCATC
AACAGCACCAGCGGCCTGTCCGGACTGATTCACAATATGCCAGTTAAGGTTCTCGGCCGT
GCCTATTATGATATTCCCGGCATTACTGACCAAAATACCTTGGCAGAATTTTGGAATCAT
CCGACACCGCCTGACAAAGAGCTGTTCCATGCCTACCGAATGTACCACCTCAACGTGACC
CAAATTAACGGCAACTTCTACAGTCAGGTGTTTTTCCCCAACAAAAAAACCTCCAACTCT
TCCACACCAGTAATCTGACTTAGCGAAGGAAGTTCAGGCCGTCTGAAAACATTTCAGACG
GCCTGAAACAATCAATACCTTAGCTACTGCCATGTAAATAAAACACAAAAATCTGCATTT
ATCATTAACAATAAATTACAAAAACAGTATAATGACCGAGCTGCCATGAGCGCATACCGA
CTCAACCTGAGCCCTTTGTAACACACAAAATATGGATATATCCCTAGGCAAAACAATATA
ACAAGCCAAACATCCTAAAGATAAGCCGGCAAGGCAATACACTCTATAAAACTATGCCGA
GCAAAATTTTTACAAAGCCCTCAACCGGTATCGCCGCCCATATGCCGCAGCATCCGTCTT
CCACTTTATATCCGCCCGCAAACCATGACCGCCGCTCCTGATATCCTCTACCGGCAAGCC
GCCGCCCTTTTGGAACAATCCAATACCGCCCAAGCCCTGCCCCTGTTGCAACAGGCGGCA
GAGCAAGGTTATGCGGAAGCTGCTTTCGTATTGGGCAACCATCTGCTGCAAAACGGCCAA
CCGGAGCAGGCACTTTCATGGTTGGAAGCCGCCGCGGCCCAACGCCATCCCAAAGCACTC
TTCTCCCTGCTGCAACAACGCGAACACAACGGCACCCCGACCGGACAGCTTCTCAACGAC
TATGCCTGGCTGGGTGAGCAGGGGCACTCAGAAGCCCAATTAATCCTCATGCGTTACCAC
GCGCAACGCAACGATCCACAATCGCTCTACTGGGCGGAACTTGCTGCCGCCCGATATGCC
GCACCTGCGTATTACCATCTGGCACGCCATCATCAACGCCAAGGCGACGTTGAAACAGCC
ATCGAACAATACGAAAAAGCGGCAGCACTCGGCGTAACTGCCGCCTGCTGGCAACTTGGT
CAAATCTACTTCTACGGTACAGGTGTCAGCCCCAACCACGCACAAGCCGAACACTATCTC
GAACCAGCCGCACAAGCCGGCCACATCGCCGCACAAACGCTGCTGGCTGACCTTCTTGCC
GCCCAACGCAAACCTGAAGCCTTGGAATGGTATCGTCGTGCCGCCGATAAGGAACAAGCG
GAAGCACAGTCTAAGCTGGCCCAATACGCCCTGACCGGCGAACTTTCCGAACGCGATCCG
TTCCAAGCGGCACGATATGCCAAAGCCGCTGCCGAGAAAAACCATCCTGAAGCCCTGAAA
ATCATGGGCGACCTCTACCGCTACGGTCTCGGTATCAAAGCCGACAACCATATCGCGCAA
GATTACTACCACCGTGCCGCCGCGCTGGGTTCTGCCGCCGCAGCACAAAAACTCATCAGC
GACGCCGCGCTGTACCATCCGCAACAATACGAACAAATCAAAACTGCCGCCTGCAACAAC
AACAAACCGAAACCATCTACCGTTTGGCGGAAGCACAAGCCTGCGCCATCGGCCGTCCCG
CCGACTACAATGCCGCGCGAAAAAATTACATGGAAGCTGCCGGGTTCCACCATAAAAACG
CAGCGGCAGCCTTAGGCCGCATCTACCATTACGGCCTCGGTACGGCGCAAGATCCTCGGG
CGGCTGCACACTGGTACGCCATTGCTGCCGAACAAAACCACCCTTCCGCCCAATACCACC
TCGCCTGTTTTTACTATCACGGGCAAGGTGTCGGCTGTCATGTTCCGACCGCCTGCTACT
GGCTGCAGGCCGCCATCGGCAACGGCCACACTTCGGCCGAATCATTAATATCCCTATTAG
AACAATGGCGACGCGAAGCACACCATGCCATCGGACAAAAGGCCGTCTGAAAAGATTTAC
ACTCGCATTTTTTGACAATCTTTAACTATTCCCCTAATATTTGCCAGTTATTTTTCACGG
ACACGCCATTGTTTTCATTTCTTTCTGAAAACACCTTGTCCGCGCATCAATACCATGACA
CTCGGCGGATAACGCCAAGCGTTGAAACACACTACATCCGGAACAAAAACGGATGCTCGG
AAAAATATTTCTAGGAGGTGAAACAACATGGAATGGGAATTCAACAGTTATTACACACTG
ATTGCCGCCACGCTCGTGTTGCTGGTTGGTAAATTTCTGGTTCAAAAAATCAAATTCTTA
CGAGACTTCAATATTCCCGAGCCGGTAGCCGGCGGTTTGATTGCCGCTATCGTCCTGTTC
GCCCTGCACGAGGCGTACGGCGTGAGCTTCAAATTTGAGAAACCGCTGCAAAATGCGTTT
ATGCTGATTTTTTTCACGTCCATCGGCTTGAGCGCGGATTTTTCCCGTTTGAAGGCGGGC
GGTTTGCCGCTGGTGGTTTTTACCGCGATTGTGGGCGGATTTATCTTGGTGCAAAACTTT
GTCGGGGTCGGACTGGCTACGGCTTTGGGTTTGGATCCGCTCATCGGTCTGATTACCGGT
TCGGTGTCGCTGACGGGCGGACACGGTACGTCAGGTGCGTGGGGACCTAATTTTGAAACG
CAATACGGCTTGGTCGGCGCAACCGGTTTGGGTATTGCATCGGCTACTTTCGGGCTGGTG
TTCGGCGGCCTGATCGGCGGGCCGGTTGCGCGCCGCCTGATCAACAAAATGGGCCGCAAA
CCGGTTGAAAACAAAAAACAGGATCAGGACGACAACGCGGACGACGTGTTCGAGCAGGCA
AAACGCACCCGCCTGATTACGGCGGAATCTGCCGTTGAAACGCTTGCCATGTTTGCCGCG
TGTTTGGCGTTTGCCGAGATTATGGACGGCTTCGACAAAGAATATCTGTTCGACCTGCCC
AAATTCGTGTGGTGTCTGTTTGGCGGCGTGGTCATCCGCAACATCCTCACTGCCGCATTC
AAGGTCAATATGTTCGACCGCGCCATCGATGTGTTCGGCAATGCTTCGCTTTCGCTTTTC
TTGGCAATGGCGTTGCTGAATTTGAAACTGTGGGAGCTGACCGGTTTGGCGGGGCCTGTA
ACCGTGATTCTTGCCGTACAAACCGTGGTGATGGTTTTGTACGCGACTTTTGTTACCTAT
GTCTTTATGGGGCGCGACTATGATGCGGCAGTATTGGCTGCCGGCCATTGCGGTTTCGGC
TTGGGTGCAACGCCGACGGCGGTGGCAAATATGCAGTCCGTCACGCATACTTTCGGCGCG
TCGCATAAGGCGTTTTTGATTGTGCCTATGGTCGGCGCGTTCTTCGTCGATTTGATTAAT
GCCGCGATTCTCACCGGTTTTGTGAATTTCTTTAAAGGCTGATTTTCCGCCTTTCCGACA
AAGCACCTGCAAGGTTTACCGCCTGCAGGTGCTTTTGCTATGATAGCCGCTATCGGTCTG
CACCGTTTGGAAGGAACATCATGTATCGGAAACTCATTGCGCTGCCGTTTGCCCTGCTGC
TTGCCGCTTGCGGCAGGGAAGAACCGCCCAAGGCATTGGAATGCGCCAACCCCGCCGTGT
TGCAAGGCATACGCGGCAATATTCAGGAAACGCTCACGCAGGAAGCGCGTTCTTTCGCGC
GCGAAGACGGCAGGCAGTTTGTCGATGCCGACAAAATTATCGCCGCCGCCTACGGTTTGG
CGTTTTCTTTGGAACACGCTTCGGAAACGCAGGAAGGCGGGCGCACGTTCTGTATCGCCG

ATTTGAACATTACCGTGCCGTCTGAAACGCTTGCCGATGCCAAGGCAAACAGCCCCCTGT
TGTACGGGGAAACTGCTTTGTCGGATATTGTGCGGCAGAAGACGGGCGGCAATGTCGAGT
TTAAAGACGGCGTATTGACGGCAGCCGTCCGCTTCCTGCCCGTCAAAGACGGTCAGACGG
CATTTGTCGACAACACGGTCGGTATGGCGGCGCAAACGCTGTCTGCCGCGCTGCTGCCTT
ACGGCGTGAAGAGCATCGTGATGATAGACGGCAAGGCGGTGAAAAAAGAAGACGCGGTCA
GGATTTTGAGCGGAAAAGCCCGTGAAGAAGAACCGTCCAAACCCACGCCCGAAGACATTT
TGGAACACAATGCCGCCGGCGGCGATGCGGGCGTACCCCAAGCCGCAGAAGGCGCGCCCG
AACCGGAAATCCTGCATCCTGACGACGGCGAGCGTGCCGATACCGTTACCGTATCACGGG
GCGAAGTGGAAGAGGCGCGCGTACAAAACCAGCGTGCGGAATCCGAAATTACCAAACTTT
GGGGAGGACTCGATACCGACGTGCAAAAAGAGTTGGTCGGCGAACAACGCAAGTGGGCGC
AGGAAAAAATCAGCAACTGCCGACAAGCCGCCGCGCAGGCAGACCGGCAGGAATACGCCG
AATACCTCAAGCTGCAATGCGACACGCGGATGACGCGCGAACGGATACAGTATCTTCGCG
GCTATTCCATCGATTAGGGGCAAACCGATGAATACCGTCCCAAAAAGCAGGATTCCCGTC
AAACCGCTGCCCGAAAAAACCACAGACGAAGCCAAAGTCGAAAAATGGCGGCAGCTCGGT
GCGGAACACGGTTTGTCGGGCGAATGGGCAGTTGCCGTCAGATTGGGCGAAAACGGTTTT
ACCGAAGAACAGATGGAAAATATCGCCAACCTGTTCGGCAGATAAAGAGAAAATTGACGG
AAATGCCGTCTGAAACCCTGTTATCGGTTTCAGACGGCATTTTGACCAATACGGTACGCA
GGCGCAAAACAGCCGGCTTTTCCTGTGTTGCCTATGCTGATGTTTCAACACACAGGACGA
TACAAAAAACGTCGCCCTATGTGCCGTCCTGATTCGGAAGGGTTACGCTCCTTCCAAATA
TAGTGGATTAACAAAAACCGGTACGGCGTTGTCTCGCCTTAGCTCAAAGAGAACGATTCT
CTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATCTGTACTGTCTGCGGCTTCG
TTGCCTTGTCCTGATTTTTGTTAATCCACTATAAATCGAGCCTAAAACAATGCCGTCTGA
AACGGAAATCTGTTTCAGACGGCATTGTTACATTCAAACGGCGGGCCGTTTATTTGAATT
TGTAGGTGTATTGCAGACCGATGATGTCGGCGTGGTTTTTGAAACGTGCGGAAGACGCGC
CTTTGCTGTCCACATCGTTGCCGCTTGCCTTCGCCGTGCGGTAGCTGGTGTCGTTGATGT
GGATGTGGGTGTAGGCGGCATCGACGACGTGGTTTTTACCGATATGGTATTTCATACCGG
CGGAGAACCAGATGCGGTTGCCGTCGGGTAGGCTGTTCATGCGGTAGTCGGCGTTGCGGA
CGGGCGATTTGTCAAAAGCGATGCCGGCGCGCAGTTGCAGCGGTTCGCTGATTTGATAAG
AACCGCCGAAGCCGACTTTGTAGGTGTTGCGCCAGTTGGGGGTGATGGTGGTGCGGTCGG
ATTTGCCTTTGACGACGGTTTTTTCTTTTTCAAAAACCAGTTCCGCCTTATCGAAGCGGC
TGTGGCGCGTCCAAGTTACGTCGCCGAACAGGTCGGCTTTATCGGACACTTTGTACATAC
CGTGTACGGACAAAGACTCAGGCGTAACGATTTTAACGCGGGCTTTTTCATTCGCCGTGT
AGCCGTTTGCTGCAAGCATCGTACTCCACATTGCTTTCGCCGCCGCGCCGTCTGCCGCCC
ATTCGGCATCGCCTTTGAGCGTGTGCGAGACTTTGGAACGGTAGTTCACGCCCACGCGCG
CACGGTCGTTGATGTCCCACATCCACGCCAGTTGGTAGCCGAAGCCCCAATCGCTGCCTT
TGACATCGGCGTGTCCGTCGGCCTGAATTTTTGCAGCTTCGGCTACACCGTTAGGTTTGG
GCGGTTTTGCCGTCAATATCTCTGCTTTACTCTTAATCCCCCAGTCGGCATATTTGCGCA
GTTCGGCGGAAGTATGTTGGGCGATGATGCCTGCGCCGAAGGAATGGCGGTCGTTGAGTT
TCCACGCGGCGACAGGTTCGACGGCGATGCTGGTCAGACCGAGTTTGTTGATGTTGTGGC
GCAACACGGAATCTTTTTCGTATTCGGTGGCAGAGCCGAAGGGGACGTACACGCCCAAGC
CCACGGTCAGATTGTCGTTGACTTTGTATGCGCCGTAGATGTGGGGCGCGACCGTGGTTT
TGGTGATTTTGCCGCTTTTCGAACCTTGGACGGGAAGCCCGGTAAAGTCGGTGGCGGAAT
CCGCCTCATAATGAATGCTGGGCAGCACGATGTTGGCGTTGACGGAAATCTGGCTGCTGT
CGAGTTTGGTCAGGCCGGCAGGGTTGTAGAAGATGGTCGATGCGTCGGCGGCTTCTGCGG
CGGCGGCATTTGCCGTGCTTTGCGCGTTGACCGACTGTGTGCCGAAGTGGTAGCCGGATG
CGTGGACGGATGCGGCGGCAAAGGCAGTGCCGAGCAGCAGGACGGTTTTTTTCAGTGCGG
AAGGGGTCATTTCGGTTTCCGTAAAAAGGCGGACGGTGGATAAATATAGTGGATTAACAA
AAATCAGGACAAGGCGACGAAGCCGCAGACAGTACAGATAGTACGGCAAGGCGAGGCAAC
GCTGTACTGGTTTAAATTTAATCCACTATAAAAAAGGCAGTCGGAAATGCCTTGTTTCGC
TTTAGTATAGGTACTCGATTTTATCCGATGTTGCCGGATTTGCACAATTTTTTCAGAGTT
TGCCCGAACCGCCGCGCCGCCGCAAAAAATGCCGTCTGAAGCCTCGGGCATCGGCTTCAG
ACGGCATTTTCCACTCAGGGCGGATTATTTGACGCGCAGCACTTCCAGTGTGTTGGTCGA
ACCGGATTCGCGCATTTGCGAACCGCTGGTAATGATGTATTGGTCGCCGGAATGCAGGAT
GTTGTGTTCCACCAGCATCGTTTCGACTTCGTTTAACGCCGTGTCGTGGTCGGTACTGGT
TGCCAAAATCAGCGGGCGCACGCCCCGGTACATCGCCATACGGCGTTGGGCGGAAACGCT
CGGGGTCAGCGCGAAAATCGGCAGGGTGATGTTGTGGCGGCTGATTTCAAAGGCGGTCGA
ACCGCTTTCGGTCAGGGCGACGATGGCTTTGGCGTGAACCGCGCGCGCCACGCTGACCGC
ACCGCCGGCAACCGCCAGGTTGGTGCTGACCGCTTCGGGATACTCGACCTGTTCGGCAAC
GCCGTTGAGCGAATCCTGCTCTTTTTCCGCAGCCGCGCAGATAATCGCCATTTGGCTGAC
GGTTTCAAACGGATACGCGCCGACGGCGGTTTCGGCGGAACACATCACCGCATCGGTACC
GTCCAATACCGCGTTTGCCACATCGCTGACTTCCGCGCGGGTCGGTACGGGGTTGGTAAT
CATCGATTCCATCATTTGCGTCGCCGTAATGCTGAAGCGGCGCAACTCGCGGGCGCGGCG
GATCATCCGTTTTTGCAGGGCGGGGACGGCGGCGTGTCCGACTTCGACCGCCAAGTCGCC
GCGCGCAACCATAATGCCGTCGCCGGCGAGGATGATTTCGTCCAAGTTTTCAATCGCTTC
CACGCGTTCGATTTTGGAAACCAAACCGGGGCGCACGGCCGTGCTGCCCTTCATTTCTTC
TTCGACTTTGGCGCGCGCGATATGCAAATCTTCGGCGGATTTCACAAAGCTGATGGCGAG
GTAGTCGCAACCGATGGCAATCGCGGTTTTCAGGTCGCGGAAGTCTTTTTCGGTCAACGC
GCCTGCGGACAGACCGCCACCGCGTTTGTTGATGCCCTTGTTGCTTTTCAGGACGTGGCT
GTTTTCCACCCTTGTGATAATCCTGCTGCCTTCGACGGATTCCACGGTCAGGGTCAGCAG
GCCGTCGTCCAGCCACAAGACATCGCCTGCGGCAACGTCGTCGGGCAGGTCGCGGTAGTC
CAAACCGACCGCCTCGCGCGTGCCTTCGCCTTCGAGCGCGGCATCCAGTACCAGCGTTTC
GCCTTTGTTCAATTCGATGCCGCCGCCGGCGATTTTGCCCACGCGGATTTTCGGGCCCTG
CAGGTCGGCAATGATGGCGATTTCCTGTCCGGCGCGTTTTGCCGCCTCGCGCACGATGAG
GGCGTTTTCCTGATGGAATTCGGGCGTGCCGTGGCTGAAGTTGAAGCGGACGACGTTCAG
ACCGCCGACGCGGATCATGTCTTCCAACAGTTCGACGTTGTTGCTGCCCGGCCCAAGGGT

GGCGACGATTTTAGTGTTGTGGCTGATGCGGGTCAGATCGCGGCTTGTCTGGTTCATATG
AAAGTCCTTTTGGTCTCAATCGGCTGTTTTGCGGTATTTTGTTACAAAATTACAGAAATT
TGGAACCGGTTTGATGTCCATTTGATGAACGCGGCGGAATATTCTGTAAAAATATGATTT
AAATTAATAGTTTGATATTTTACCTGCAAACCGCCTTTTTTGGCGCAAAATTACACGGTT
TTATGACTTAGGCTAAATTTATTTTGGGGCTGTCCTAGATAACTAGGGAAATTCAAATTA
AGTTAGAATTATCCCTATGAGAAAAAGTCGTCTAAGCCGGTATAAACAAAATAAACTCAT
TGAGCTATTTGTCGCAGGTGTAACTGCAAGAACAGCACCAGAGTTAGTAGGCCTTAATAA
AAATACCGCAGCCTATTATTTTCATCGTTTACGATGACTTAATTTATCAAAACAGCCCAC
ATTTAGAAATGTTTGATGGCGAAGTAGAAGCAGATGAAAGTTATTTTGGCGGACAACGCA
AAGGCAAACGCGGTCGCGGTGCTGCCGGTAAAGTCGCCGTATTCGGTCTTTTGAAGCGAA
ATGGTAAGGTTTATACGGTTACAGTACCGAATACTCAAACCGCTACTTTATTTCCTATTA
TCCGTGAACAAGTGAAACCTGACAGCATTTTTTATACGGATTGTTATCGTAGCTATGATG
TATTAGATGTGCGCGAATTTAGCCATTTTAGCTTCGCTGAAACTTCGTTTTCGTATCAAT
CACAGCACACATTTTGCCCAACGACAAAACCATATTAATGGAATTGAGAACTTTTGGAAC
CAGGCAAAACGTCATTTACGCAAGTCTAACGGCATTCCCAAAGCGCATTTTGAGCTGTAT
TTAAAGGAGTGCGAACGACGTTTTAACAACAGTGAGATAAAAGTTCTTGTTCCATTTTAA
AACAATTAGTAAAATCGAGTTTATCTTAGTTATCTAGGACAGCCCCGTTTGTGTACTGAA
ATGCTTCAAAACACCAAACCAAGTTTCGTTTTCTAAAATACGAAACCATTACTGCTGCCT
AAATTTTTTTGGATTGCTAAATTATGGCAGTATGATTTTGGATTTTAAATTGAAAGGCAA
GAAAAATCTCAAAAAATGATGTAGTTAAAGTAATTGGTATATTCCCCCTATTGTCCGAAC
AATAGAGCAGACTTCCCGGCAGGCTGCCCACATCAGAACGCCCGTTCGCTGGTTTGTACG
TCCTGAAAAAGCTCTTGCATTAAGTTAATCATAATGGGAAATTTAAATTTTTTTAATGCT
TACTTAAACAAAAGCCCCACTCCACCATTAGGAGTTTCTTTTTCAGTATACAAGTAAATA
TTTTTAAAATATTGATTTAATTTAAAATAAAATACTTGCAAAAAAAGTATTAAATTAAAC
TTAAGAAAGGTTAATTCTGATTTACATTTCCAACCATACTTCTTTACAGGAGAAAATCAT
GAAAGAGTTACACACCTCTGAATTAGTTGAAGTGTCAGGTGGCAAATTCCATATCTTTGC
ACAGGGTGGCGGCAACCTAGGTAAAAAAGATATGGTTGCTGTTGGTAAAATTGGTGCTTC
CTATTCCCCTAACAATAGTGGAGTAGAGTTTTCTGTTAGCAAGCAATTTGGATATGTACA
AGGTCTTGGTGTACAGTTTTCGAAACCTACTTTTGGTATTAGTAAAAAATGGTAAGATTT
TTTGTTTTATCCTTTCTGACATTAATAAATCTATGCTCATTAAGCGCATGCAATAGCCAC
TTTACAGGAAATATCAATCCATTAGGTACTCACAATAAAGTTGCTAATCCCAATTGTGCC
AATAGTGCCAATAGTCATATCAGACAACCCAGTAGGAAAAACTATGATCCAACTGAATAT
AGTGCTTGGTTACAGTATATGCATGATTGCAAATAATGAGTAACGATGAAAATTTACTTT
TTTCTCAACCACACTTAACAAAGGTGAATATTATGCAAGTTTTGACTTTGAATGAAATTT
AACAAGTTTCTGGTGCTGCTTGTAACTGGCGTGATTTCTCAAAAAATACCATTGGTAGTG
CATTAGGTGGAGCAGCTGGTGGGGCAATTGTTGGTTCATTTGCAGGTGGTATTGGTGCTA
TTCCAGGTGCGAAATTCGGAGCTATTGGTGGTGCAATCACTGGTGCTGTACAATATGGAA
GCACTTGTTGGTGGTAATATTCCTTAATAAAACTAGGGTATTTTGATATTTTCTATTCAA
AATACCCTAGTTTTTCATAAGAACTTAAATACAAAAAGGAACAAATAATGAAAAAATATA
GTGATTATTTTAAATATTTAATCTTTTTTTTGATTTTACTCCCAACAAATTATCTCGTAT
CTCATTATGTGGTACAAACCTCAATGAGTATGTTAAGCATTTTAAGTTCTTCTATAATAA
CAACTTGCCTTTTTTTTGTTTTTACAAATTTATCCCAATCAAAGAAACATAAATAAGTAC
ACATGTCTAACAATCACTCATTTTTCAGACCAGAAGTCTTTGTAGCTCAACGGAACAAGT
GGACAGGACCAGTAGGCTGGGTTGACGCAATGGGAGCTGGTATTTTCTCTGTTGCTGGCG
GATACAATATCGGTCGTGGCATGATGAAGCCATAAGATAATTACATCATTAAGGAAAAGG
TAATTTCAGTTACAGCAATATGTATTGAAGTTACCTTTTTCTATTTAGATTGAACAATTT
TGAAAGAGAAAAATTATGAATACTGAAACCATTTACGCCACTGTCTTTTGCATTTTAGCT
GCAACCATTTCTGGATTATTGGTTAAATTTAATGTAATTAAAATAGAAACATCAATCAAT
AGCAAATTTATGTTATTAGGCATAAGTATTTTAATTATTGGTATTTTTCTATCCATTTTT
TTTTAAGAAATAATAATAAATGTCCCACTTATTCCGAAAAGAAGTCTTTGTAGCCCAACA
AAATAAGTGGACAGGTCAGGTTATCTTGACCCGTCCATTCTCTTTTTTATTTCTGACTTT
TTGCGCTTTTCTCATTGCTCTGTGTATCATTATCTTTTTGATTTTTGGTAGCTATACCAA
TAAAACAACCGTTGAAGGTCAATTACTTCCAACTATGGGGGTGGTTCGTGTTTACTCTTC
CGATATCGGCACGATTACGCATAAATTTGTTGAAGATGGTAACTTTGTCAAAGCTGGCGA
ACCATTGTTCAAACTTTCCACATCGCGTTTTGGCGAAAAAGGAAACGTACAAGCCAAATT
GGCAGCAGAAGCCAACCTTAAAAAAACTTTGGCATTACAAGAATTGGAACGTTTAAAGCG
CATTCATCAAAATGAGCAAAAAAATGTTCATAACAACATTCATCGTTTAAACAATCAATT
AGAGAATATTAAACAGCAAATTACAGGGCAAAATCGTCAAATTCGTTTAGCGGAAAAAAC
CCTTAACAAGAACAAGTTTTTAGCCAGTCAAGGCGCAGTATCCCAACAAGATAAGATGAC
CGCCGAAAGCCATTTATTGGAACAACGCTCACGTTTGGAGAGCCTAAAACGTGAACAAAA
TAATGCAATCAGGGAACTTGATGAACAGAAAATCACATTAAGCAGCCTGCCTGAACGCCA
TAAAACCGAATTGAGCCAACTCAACCGTGCGATTACGGAAATGAACCAAGAAATTTTGGA
TTTTGATTTGAAATCCGAACAAACCATACGAGCTAGTAAATCAGGTTGAGACCTTTGCAA
AAATAATCTGTTAACGAAATTTCACGCATAAAAATCCGCCAAAAAATTTTCAATTCCCTA
AAACCTTCCTAATATTGAGCAAAAAGTAGGAAAAATCAGAAAAGTTTTGCATTTTGAAAA
TGAGATTGAGCATAAAATTTTAGTAACCTATGTTATTGCAAAGGTCTCAGGTTATATATC
AACAATTAATGTTGATATAGGGCAACAAGTTGAACCGTCTAAATTGCTGTTAAGCATTGT
CCCTGAACAAACTGAATTGGTCGCCAATCTTTACATACCCAGTAAAGCTGTTGGTTTTAT
TAAACCGAAAGATAAAGTTGTTTTACGTTACCAAGCGTACCCTTACCAAAAATTTGGACA
TGCCACAGGAGAAATTATTTCAGTTGCCAGAACTGCTCTCGGTAAACAAAAGCTATCAGG
TTTAGGTATCATTTTCACTAACCCAACCTTATTAAATGAACCTGCCTATCTTGTGAAAGT
TAAATTGGAAAAACAAACGATTAAAGCATACGGAGAAAACAAGCCGCTTCAAATTGGCAT
GATTTTAGAAGCAGATATTCTCCATGAACGAAAAAATTGTACGAATGGGTACTTGACCCA
CTTTACAGCATTTCAGGAAAAATCAATTAAAAATGCATTATTTATCAAGACTGTCCTTTG
GATTTAACAAAAAGCTACCTGTCATTCTGCAAACAGAAGTTGCTGAATGTGGTTTAGCAT

GCCTGACATCCATCTTGTCCTATTATGGCTTTCACACTGATTTAAGAACGTTACGCCAAA
AATACACCCTGTCATTAAAGGGCGCAAATCTTGCAGACATCATGAGATTTGGCAATGAAA
TGAATTTAACGCCACGAGCTTTGCGTTTAGAGTTAGATGAGCTGTCAAATTTACAACTAC
CCTGCATTCTCCATTGGAACTTAAACCATTTTGTTGTACTTTGTTCCATTTCCAAAGACA
GTATCGTCATTATGGACCCTGCTGTCGGTATGCGAAAAATCAAAATGGACGAAGTTTCAC
AAAAATTCACAGGGATTGCCCTAGAATTATTCCCCAATACCCATTTTGAAGAGAAAAAAG
AAACAAAGAAAATCAAAATATTATCTCTATTAAGGGGGGGTCAGGCTTAAAACGCTCTTT
AATTCAAATGCTTATATTAGCTATTTCTTTGGAAGTCTTTGCATTGGTTAGTCCATTCTT
TATGCAATGGGTAATAGACCATGTCATTGTAACTGCTGATAAAAATTTATTATTGACCCT
TACTTTGGGATTTGGTTTACTGACTATCCTGCAACAGTTAATTAGCCTGTTACAAGCATG
GGTAGGTATGCACCTATCTACAACTCTTAATTTACAATGGAAAGCCAATATATTTAAAAG
GTTACTTGACTTACCTAATGACTATTTCAGTAAACGACATTTAGGAGATGTGATTTCAAG
ATTTGGTTCAATAGATCATATCCAAGAAACACTAACTTCTACTTTTTTTGTTTTAGTTTT
AAATAGCTTAATGGCTGTTTTTACTTTCGTGTTAATGACAATTTACAGCACTCAATTATC
GCTGATTGTTCTTTTAACACTTGTTTTGTACATACTAATTCGTTGGCTTGCATATTACCC
ATTAAGAAATGCAACAGAAGAAAATATTGTTCATGAAGCCAAACAAAACTCATATTTCAT
GGAAACCATTCGTGGTATCCAATCAGTTAAATTATTTGATAAACATTATCAAAGACATGG
CACTTGGATGAGCCTATTTGTGAATACAGTCAATACCAAGCTGACAACAGATAAACTCTC
TGCTTTATTTGAATTTTCAAATAAACTGTTGTTTAGCATGGAAAATGTTATCATAATTTA
TCTTGGTGCAAGCGCAATTTTAGATGGTTCATTTACAGTCGGTGTTCTGATGGCTTTTTT
GGCTTATAAAGGGCAATTTGAAAGCAGAACAGCTTCTCTCGTTGACCAATACATCCAAAT
CAAAATGTTAGGGCTTCATGCTGAACGTTTGGCTGACATTACTTTAAATGAAACAGAAAC
TGAAATTATTAAGTATAATCATATACCTAAATTAGATAATGAACAACTGGTTCTTAAAGT
TGAAAACGTCTCATTCAGATATGCTGATAATGAGCCATATCTTTTTGAAAACATTAATTT
GGAATTTAAAGATAATGAAGCAGTTGTTTTAACAGGACAATCTGGTCGGGGGAAGTCCAC
TTTGTTAAACATTTTAACAGGTAGCCTAAAACCTGAAACTGGTACAGTTAGTATTAATGG
GCATGATATATATCAAGTTTCTCCATCCTTTATTAGGGGATTGAGCGGGATTGTTCGCCA
AGATGATGTCCTTTTTGCAGGTTCTATTGGGGAAAATATTTCATTTTTTGATGAAAGCCC
AAATATGGAGCTCATTGAACAATGTGCAAAAATGGCACAAATACATGACGATATACTTAA
AATGCCAATGGGCTATGAGACCTTGATTGGCGATATGGGAAATATCTTATCAGGTGGACA
AAAGCAGAGAGTTATCTTGGCTCGTGCATTGTATAAACGACCCAAAATTCTATTTTTAGA
CGAAGCAAGTAGCCATTTAGATGTAGAAAATGAACAAAAAATTAACCATAACCTAAAAAG
TCTTGGTATTATGAAAATAATGGTTGCACACCGCCAAGAAACAATTCAATCGGCAGATAA
AATTCTGAATTTAGGTTGAACAGAACAAGACTTCATTTTTCTTTAACAAAAAGTGAAGTC
TTTTTTCAAATAATTTAATAGAATACATGAAAATAGCGGTTTAACGTTCCATTTCCCAAT
CATCACGACTGGCTTTGTGTTTTGGCGATTTTTCAGTTTCCTTTTTCTGTTGAATTTGTT
GTTTTTTCTGCTCTTGTTCCCATTTTTGGGCTAATTTCACGGTCTCATTTTCAGCCCATT
CCATCACGGCACAACGATGTAGCTTTTCTCCGATATCGCCATTAAAGCCAGCTCCACGAA
CTTCACCATAAATTCTTGAATATTTTTGATTATATTCAATTTCTTTTCCATTTTCTTTAA
AGGATTTCTCCCACTTTTCACAAACTTCATCAAAATCTTTCAAAGGATATTTTTTAAGG
GGCTGTCCTAGATAACTAGGGAAATTCAAATTAAGTTAGAATTATCCCTATGAGAAAAAG
TCGTCTAAGCCAGTATAAACAAAATAAACTCATTGAACTGTTTGTCACAGGTGTAACTGC
AAGAACGGCAGCAGAGTTAGTAGGCGTTAATAAAAATACCGCAGCCTATTATTTTCATCG
TTTACGATTACTTATTTATCAAAACAGTCCGCATTTGGAAATGTTTGATGGCGAAGTAGA
AGCAGATGAAAGTTATTTTGGCGGACAACGCAAAGGCAAACGCGGTCGCGGTGCTGCCGG
TAAAGTCGCCGTATTCGGTCTTTTGAAGCGAAATGGTAAGGTTTATACGGTTACAGTACC
GAATACTCAAACCGCTACTTTATTTCCTATTATCCGTGAACAAGTGAAACCTGACAGCAT
TTTTTATACGGATTGTTATCGTAGCTATGATGTATTAGATGTGCGCGAATTTAGCCATTT
TAGCTTCGCTGAAACTTCGTTTTCGTATCAATCACAGCACACATTTTGCCGAACGACAAA
ACCATATTAATGGAATTGAGAACTTTTGGAATCAGGCAAAACGTCATTTACGCAAGTTTA
ACGGCATTCCCAAAGCGCATTTTGAGCTGTATTTAAAGGAGTGCGAATGGCGTTTTAACA
ACAGTGAGATAAAAGTTCTTGTTCCATTTTAAAACAATTAGTAAAATCAAGTTTGTCCTA
GTTATCTAGGACAGCCCCTTGTTTTTTGTTCGGCGGCTTGCGTGGTCGGGTAAAATGAAA
GTTTTGAACGGTTGGTCGGACAGGAAGATGTGGCGGGTTTTGAGTGCTTTGCCGATAGGC
GTGGTGTTTTTTGATTTGATCTACGGTTTTGTGTTGAATGTGTTGCAGGGTTTGGATTTG
CAGCGTGCCGTGCCGGATTCGGAAGGCGTGTTGGCGGTTACGCCCGATATTGCATTCAAC
AGTTTGCAGATTGTCGCCAACGGCGGTATGGCGGCGGTGGTCTGTTTCGGGTTGGCGGTT
GTGTTTTTGCTCAACCGTTCGGTGCGGCGGCGGCAGGTGTTGGAAATCGGGGTGTTCCGG
ATGTTGGGGCTGGTGGCGGTATTGGCGTTCAGCGCGCCGTCGGTGTGGGAGTGGGCGAAC
GCGCTGCCGCTGCTGCTGAAGGGCGCGGACGTGGTCAATACGGGGAATGCGCGTTATGTG
CTGACGGCTTTGTGTATGCCCTTTCCGGCGGTGTCGTGCGTCATCGGGCTGGTGGGGCGG
TTCAGGCTTCAGACGGCATCGGGCAGGGCGGCAAAGTCAGGGGGTGCGGGCAAGGCGGAC
GGATAGGACGCATTTTTCAGCGGGTGCGTCGAGAAGCAGCCGATGTGTTTGGCAGCCGCA
GCTTGGGGGGTGTAGTGCTAATGGCGGTTTCTTTGCTTTTATAGTGGATTAACAAAAACC
AGTACGGCGTTGCCTCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTGCTGAAGCACCA
AGTGAATCGGTTCCGTACTATTTGTACTGTCTGCGGCTTCGTCGCCTTGTCCTGATTTTT
GTTAATCCACTATATAAAATAAATGGGCAAAAATCGGTTTATTATCGTTTTTGCCGCATT
TGGATTTGTTCTACCGTAAAACGTGTTTGACGAACGGGATTCTTATTAAAAAACATCTGA
TTTCTAACAAAATCAGTATTTTTTGGCACGATGGCTAAAATTTTTCCTTCCATTTCGCCA
TCACGTGTTTTCCATGCGCTCAAGAATTGTGATTTGCTCATTGAGACGTGCCCCAGCGAT
GGATCAGCCAGCAAAACAGTTTCTCCGTTAATACCGTTCAATACCGAAAAATGGTTGTTT
TTACGGTATTTTAAATACACAATTACAGGAATTTTTAGTTGTACCAACTGTTCAAATGGC
AAAGCATAACCTTGTGCTTCAAAACCCAGTTCGGGCATTATGCGTTGCATATCGTCAAAA
GAAGCACGCATTTGGGTTTTATCCATTTTGTCTAAGATTTCCGCTTCAGAATAATGTCTG
CCATAAAAATTATTCAGTAACGTGGCAATCGAAGCCGCGCCGCAAGAAAATCCAAATCT

TGTTTTACTATGCCGGAATCTCGCCGTGCTTTCCAACTCCGTACATGGATGTTTTGGTAA
GAAGCGGGGGGTCAACAAACATAGGCCAAGCAAAAACTATATTTGGGGCGAAACCAATCA
AAGCCGCATAATTTATCAATTTATAAAGATTTTTTATCATAATATGTATACGCGGAATAA
ACGCATGAAACATAAAAAAATAAAATCATATGCAATTTTATTGCATGAATAAATATGAAT
AAAATAGATAATGATGGGAGTAAATACGCCATGTATTTTGGAAGTTTAAATTTATTAATA
ATAAAATAATTTATCGTAGCGCAAATAAATCCCAAAATTGGAACGATTAGAAAAAAAATT
AATACACCCATCATCATGCAAACTCTATATTAATAAATAGCTAACTAATTCTATTGTGGA
AATTAGTTAGCTAACTAAAAGTTATTAATGATTATTTTCGAGAATTGACTGCATTGTTGG
CAGCATTGGCACCAAAACCTAGTGCATGAATACCCGGTCTCCATGCCAAATTCCCAGCCA
ATCCGCCTCCGGCAGCAGCAGCCAGCCCTGTTTTGCCGCTACTCCTGTTGCCGCACCGAT
TCCTGTCGCAGTAGCCGCGCCTTGCGCAGTTCCTAATTTACCATGATTATACAAATTAGC
ACCATGATACCCCCATGCACCTAATGCACCGCCAAAAGCAGCGGCTGCAATAATGGGAAC
AAATTCACCTTGTGTTTCTTTCATTTCAGCCTGTGATAATTGAATTGCTTTCACATTTTG
GCTGTCAAAAACTTGGCTGTCTAAATTTTGCGCCATTACAGGTGTAATCATCATAGCCAT
TACAGTTGCAATTTTCGTTGCGCTGGTTTGCACATAAATAGGATTAGCAAATTCGCTTTG
ATTGCGTTCAGTGTTGATGTAGCTAATACTGCTTTCTAGTTTGAATTTACCCTTGTCAGT
CAATAATTCTTCCAAACTTAAAGGTAAGTCAGCATAAGCAATTTGGCTGGCAACAGTCAA
AATAAAATCTATTAGACATTTGTGTTTTTGCATCATTTCGTTTGATTTTCTAGGTTTTGA
GAATGATACAAAGTTTTTTACAAAGTAAAGAGTCACTCTGAAAAAACTTTTTTCATTATA
AATCAAAATATTGATAGAATAAATAGCGAGCATCGATTCACGGTGCGCTTTAGTGCAAAG
CGTACAACGCGAGCCTGAACCACCAGCCGCAACAGGAAAAGAAAGCCGATAGAGTGCAAT
GCTTGCCAACGTGCAAGCGAGCTTGCAAGAACGCTTGGCTCAACGAGAGCAGGCAAGACA
GAAAGCAGAAAGCAGGATAGGAGCGGTAACGCAAAGGTCTCGCGCTTTGATTTCGCCGTA
AACCCTGCTGCCGCCTTGTCCGGAAAGGGTGCAGGCGGCGAGTGCCGACAGGGTGCAGAT
GGGGAGGGGGGTTTTCATTTGGGGTCGCAACGGAAGTGGTATGCGCAGATTTCAAAACCG
TTTTTGAAATACAGGCGGTGCGCGTCGGCACGGTCGTGGTTGACGTGGACGTTGAGGTGG
ATTTTGGTTACCCCTGTTTCCGCGCCGATTTTGCGGACTTCTTCCAAAAGGCGCGAGGCG
TAGCCTTTGCGGCGGCTTTGCGGCAGGGTAACGATGTCATCGATGTGGATGTGGCGGCCG
CTGGCGAGGGTGCAGGCTTCGCGGAAGCCGCAGACGGCGACGGCATTGTGTTTGCCTTCT
TCAAAAATACCCAGCAGGCGGTAGCCTTGGGGGCGTTGGACTTTGTTGATCTGTTCGGTA
AAGCGGTTGATGTCGGTCAGGGCGGAACGCAAAACGCTCAAGGCTGCAAAGGCGGTGGCG
GTGTCGTCCGCGCCGATTTCGCGCAAAACGTAGGATGCGCCCGAGGCGGTCTGTTCCTGT
GCTTTCTCGGCGGCGTGTTTTTCTTCGATTGCCTGTGCCAGCATGACGTGTTCGTCGGCA
GGGTTGTTTTGTCCGCCCTGTTCGCGTTCTTCGAGCAGGGCTTTGCAGTCGATGACGCGC
AGGTCGTTGTCGGCGGCAAAGTCCATCAGGAAGCGGAACATTTGGGGATTGTCGGTTTCC
AGTTTTTTATCGACGGCGACGCAGCGGATGTTGTCCACCAGTATGGGGCGCACCCATTTC
GAATAGGAAAGCCTGTGGTCTTTGGTGAACGAGGACAGAATGCCGCACAGGCGTTCCGCC
CAGTCGCTGGGACGGAAAATCTTGCCGGAACTCGTTGTGCCGTGGATGACGACTTCGTAG
GGGTTGCAGACTAACATGGCGGCTTCCTGAAAAGAAATGTCTAGCGCGATTATACCTTAT
GCTTATGCGGGCGTGTTTGGATATGCCGTCTGAAAAGTACGGGATTCGTGCGGTAAAACT
TTGCGGCGGCAAATGTGCGATAATACGCGCCGTATTGCCGCTTTTGCGAAGCTGTTCCGC
AAACATACGGGCGGCGTGGACGACGTATAACCGGATACCCGCCTGACGCGGGTTTTTTAC
GGAAGGGGGGCAAAAATGCCTAATCCGCTTTACAGACAGCATATCATCTCCATTTCGGAT
TTGTCGCGCGAACAGTTGGAATGCCTGCTTCAGACGGCATTGAAGCTGAAGGCGCATCCG
CGCGGCGACCTGTTGGAAGGCAAACTTATCGGTTCGTGCTTTTTCGAGCCGTCCACGCGC
ACGAGGCTGTCGTTTGAAACGGCGGTGCAGCGTTTGGGCGGCAAGGTCATCGGTTTCTCG
GACGGCGCGAATACCAGTGCCAAAAAAGGCGAGACGCTTGCCGATACCGCCCGCATCATT
TCCGGATATACTGATGCTATCATCCAACGCCACCCCAAAGACGGCGCGGCGCGCGTGGCA
GCGGAGTTTTCGCGCGTCCCCGTTATCAACGCCGGCGACGGCACGAACCAGCACCCCAGT
CAGACGCTGCTCGACCTGGTTACCATTTATGAAACACAGGGACGTTTGGACAAGCTCAAA
ATCGCCATGGCGGGCGACTTGAAATACGGACGTACCGTGCATTCGCTTTGTCAGGCGTTG
AAACGCTGGAATTGTGAATTTGCCTTTGTTTCGCCGCCCAGCCTAGCCATGCCCGACTAT
ATTACCGAAGAGTTGGACGAAGCCGGCTGCCGATACCGTATCCTCGGTAGTTTGGAAGAA
GCGGCGGAATGGGCGGATATCCTGTATATGACCCGCGTCCAGCGCGAACGTTTCGACGAA
CAGGAATTTGCCAAAATCCAAGGCAAATTCAACCTCGAAGCGTCTATGCTCGCCCGCGCC
AAACCGAACCTGCGCGTGCTGCACCCCCTGCCGCGCGTGGACGAAATCCATCCCGATGTC
GATGCCACGCCGCACGCCTATTATTTCGAGCAGGCGACCAACGGCGTTTATGCGCGTATG
GCGATATTGTCGCTGGTGTTGAACGAAGAAGTGTGAGGAACCGATATGGAAACCCCGAAA
CTCAGTGTCGAAGCCATTGAAAAAGGTACGGTTATCGACCATATTCCCGCCGGCAGGGGG
CTGACCATCCTGCGCCAGTTCAAACTTTTGCACTACGGCAACGCGGTAACCGTGGGCTTC
AACCTGCCCAGCAAAACCCAAGGCAGCAAAGACATCATCAAAATCAAAGGCGTGTGCTTG
GACGACAAAGCCGCCGACCGCCTCGCCCTGTTCGCCCCCGAAGCGGTGGTCAACACCATC
GACAATTTCAAGGTCGTGCAGAAGCGGCATTTGAACCTGCCCGACGAAATCGCCGAAGTG
TTCCGCTGTCCGAACACGAATTGCGCCGGCCACGGCGAGCCGGTCAAAAGCCGGTTTTAT
GTTAAAAAGCACAACGGGCAGACGCGGCTGAAATGCCACTACTGCGAAAAAACCTACAGC
CGGGATTCGGTGGCGGAAGCCTGACGGATTCCCTTAAACCGAGTGGGCGGCATTTCGTCT
GCCGCCTGTTTTGCCAATCTGAAATGGAATGATGATGCACGCTTCTGTCCAAAGCCGTTT
CGCACCGATACTTTATGTTTTGATTTTCTTTGCCGGTTTTTTGACCGCGCAAATCTGGTT
CAATCAGAAAGCCTATACTGAAGAGCTGCCTCCGCTTCTGTCCGCATTGTCCGCCGTCGC
GCTGGTGTGGCTGGCGTGGGCGTTCGTGTCGGCGCGTTCAAAGGCCAAGGCGGAAAAGTT
CTACCGCGAAAAAATGATACAGAACGAAAGCATACACCCCGTCCTGCACGCCTCTTTGCA
ACACTTGGAACACAAGCCGCAAATACTCGCCCTGCTGGTCAAAAACCACGGCAAAGGGAT
GGCGGAACAGGTCAGGTTCAAGGCGGAAGTGCTGCCCGACGACGAAGACGCGCGCACGAT
TGCCGCCGAGTTGGCAAAAATGGATATGTTCGCATTGGGGACGGACGCGGTCGCCTCGGG
CGAAACCTATGGACGCGTGTTCGCCGATATTTTCGAGTTGTCGGCGGCTTTGGAAGGGCG

CGCGTTCAAAGGAATGTTGAAACTGACGGCGGAATATAAAAACATCTTCGGCGATGCCTG
CCGTTCGGAAACGGCGTTGGAGTTGGGCGCACTCAATCAGGCGTTGCAGGAGATTTCAAA
AACATCGGAAAAGTCCAAACGGATATTTTATTGAAGATGGAAAAATGCCGTCTGAAACGG
AAGGTGTTTCAGACGGCATTTTTGTCGGATGATTAATTATTCGGAGCGGTTGAAGCCAAA
CTTCACGCGGCTCCGGCCCTGATCCGGTATATTGTCCAAATCGCGTCCCGGATTGCCGGC
GGTGTCGCCTACGGAAATATCGGAGATGTTTTCCAAAATGATGGCGGACGACAGGTGTTC
GGAGGTGCGGTAAACCATTGCCAAGCCCACTTCTTCGGCAGGAGTGGAAATCAGCTCGAC
GGTATCCCTGCTTTTGAAATTGTTGGAGAGGTCGACCTGCATCGTTTTCTTGCGTTTGTA
GAGGCTCAAAACCGTGCCTTTGTCCAAACCGTCCGCCTCGCCTTTGTCGATGGTGATGGT
TTGAAACTGGCCGGCAATCCTTGTGCCTTCAAACACGGAAACGATTTTAGCCTGAACCGG
GCGGGACGGTTCGTGCGGCATCATGTTGAAGCGGTCGGTGTCTTCCGGCATTTTCATCAG
GTAGTCGCCCTGCTGTATTTCGGAAATGGCGGTTTCGACCACCAGCGGCTGTATCGAAGG
GGTGCGCAGCGGGGTAATCAAAGGATGGGTGCGGGTATGGTATTCGTTGTCTTTCGGCCG
TTCTCCAGCCTGTTTCGAGCGTTGTTCGAGGACAGAGTCGGTATAGTCGAGGGAGCGCAC
GATGCCGCTGAATGCGACTTCCTGCCCGAGGAATTTACCCGTATCCGGATCGGTGATGTT
TTTATTGATTCGGTAGGTCAGGTAGCGGCCCGGCTCTTTCAGGCCTTTGGTGTAAACCCT
GGTGCCTTTGGTGTACAGCAGCCTGCCTTCCGGGCCCGAGAGCAGGCGCGGCGCGGCAGC
GGTTTCTTTGCGGGAAACGATTTGCGGATGCCGCATAAAGATGCGGTAGAAGTTGACATC
GATGGCGGGAATACCGTATCCGGACACTTCCTTATCCGGACTCATTTTGACGACGGGGAT
GCCGTCTGTCTGTTCCAAGCCGAGGCGCGGTTCGCCGTCAACGTGGCGCAACACCAATAC
CTGGTCCGGATAAATCAGGTCGGGATTGTGGATTTGATCCCGGTTCGCGTCCCACAGGCG
GCCCCATTGCCACGGGCTGTACAGGTATTTGCCCGAAATGCCCCACAGGGTGTCGCCCTG
TTTGACCGTGTAGCGTTCCGGCGCGTTCGGGCGCACCTCCAAATTTGCCGCCAAAGTTTG
TGTTGAGAATGCCATACCTGCCGCGCAGAGCAGGGTTATAATACGACGTTGCATAACCGT
TCCCCTTATCTGATAAATTTCGGTTTGTCTTGCTTGATTGGGTTGGAAAAAGCGGCGGCA
GCCCCTCGGGATGTGCCGCGTGATAAAAAATGTTCCGCATTTTAACATCGAATTATCCGC
ACCATCACGGTAATTATGAAAAACAGGCGGCGTATCCGCCGAAGGAAAGAGAAAATTATG
GCTTTATTGAATATCTTGCAATATCCCGACGAGCGTCTGCACACGGTGGCAAAGCCTGTC
GAACAAGTCGACGAGCGCATCCGGAAGCTGATTGCCGATATGTTTGAAACGATGTACGAA
TCGCGCGGCATCGGGCTGGCGGCGACGCAGGTCGATGTGCACGAGCGCGTGGTCGTGATG
GATTTGACCGAAGACCGCAGCGAACCGCGCGTGTTCATCAACCCCGTCATCGTTGAAAAA
GACGGCGAAACCACTTACGAAGAGGGCTGCCTGTCCGTGCCGGGCATTTACGACACCGTA
ACCCGCGCCGAACGCGTCAAGGTCGAGGCTTTGAACGAAAAAGGCGAAAAGTTCACGCTG
GAGGCGGACGGCTTGTTGGCGATTTGCGTGCAGCACGAGTTGGACCACCTGATGGGCATC
GTGTTTGTCGAACGCCTTTCCCAACTCAAGCAGGGGCGGATTAAGACCAAGCTGAAAAAA
CGTCAGAAACATACGATTTGACCCTTTTGCCGTGCCGTCTGAACGCTGCAAAGTTTTCAG
ACGGCACGGTCTTGTCCGACAATTTTACGCACGCGCAGGAACACGCTATGAAAGTCATCT
TCGCCGGCACGCCCGATTTTGCCGCCGCCGCCTTAAGAGCCGTTGCCGCCGCCGGTTTTG
AAATTCCGCTGGTGCTGACCCAGCCCGACCGTCCGAAAGGGCGCGGTATGCAACTGACTG
CCCCGCCCGTCAAACAAGCCGCGCTGGAACTCGGTTTGCGCGTCGAACAGCCCGAAAAGC
TGCGCAACAACGCCGAAGCCCTGCAAATGCTCAAAGAGGTCGAGGCAGACGTAATGGTGG
TTGCCGCCTACGGTTTGATTCTGCCGCAGGAAGTGTTGGATACGCCGAAACACGGCTGCC
TCAACATCCACGCTTCGCTGTTACCCCGTTGGCGTGGCGCGGCGCCGATTCAACGCGCGA
TTGAAGCCGGCGATGCCGAGACAGGCGTGTGTATTATGCAGATGGACATCGGTTTGGACA
CCGGCGATGTGGTCAGCGAACACCGCTACGCCATCCAACCGACCGATACCGCCAACGAAG
TCCACGACGCGCTGATGGAAATCGGTGCGGCGGCGGTTGTTGCCGATTTGCAACAGCTTC
AAAGCAAAGGCCGTCTGAACGCGGTCAAACAGCCCGAAGAAGGTGTTACTTACGCGCAAA
AATTGAGCAAAGAAGAGGCGCGTATCGATTGGAGCAAAAGCGCGGCGGTTATCGAACGCA
AAATCCGCGCCTTCAACCCCGTGCCTGCCGCGTGGGTTGAGTATCAGGGCAAGCCGATGA
AAATCCGGCGGGCGGAAGTGGTGGCGCAACAAGGCGCGGCAGGCGAAGTGTTGTCCTGTT
CGGCGGACGGTTTGGTCGTTGCCTGCGGCGAAAACGCGCTGAAGATTACCGAATTGCAGC
CTGCCGGCGGCAGGCGGATGAATATCGCGGCGTTTGCAGCAGGACGGCATATCGAAGCAG
GGGCGAAGCTGTAAATCCCTTCAGACGGCATTCCGATCCGCAAACGGGAATGCCGTCTGA
AACCATCAGTCGAAGAAAGCGAATCACATAATATGAGTATGGCACTTGCCCAAAAACTTG
CCGCCGACAGCATTGCGGCGGTTGCCGAAGGACGTAACCTTCAGGACGTGTTGGCGCAAA
TCCGCACCGCGCATCCCGACCTTATGGCGCAGGAAAACGGCGCGTTGCAGGACATCGCCT
ACGGCTGCCAGCGTTATTTGGGCAGTTTGAAACATATGCTCGCGCAGATGCTGAAAAAGC
CGATTGGCAATCCGCAGCTCGAAAGCCTGCTTTTGGCGGCGTTGTACCAGCTGCATTACA
CGCGCAACGCGCCCCACGCCGTGGTCAATGAGGCGGTGGAAAGCATCGCGAAAATCGGAC
GCGGGCAGTACCGTTCGTTTGCCAACGCGGTTTTGCGCCGCTTTTTGCGCGAACGCGACA
AGCTTGTGGCTTCCTGTAAAAAAGACGATGTAGCGAAACACAACCTGCCGCTGTGGTGGG
TGGCTTACTTGAAAAACCATTATCCGAAACACTGGCACAACATCGCCGCCGCGCTGCAAT
CCCATCCGCCGATGACTTTGCGCGTCAACCGCCGACACGGCAATGCCGAAAGCTATTTGG
AAAAACTGGTGGCGGAAGGTATCGCGGCTAAGGCGTTGGACGAATATGCGGTTACGTTGG
AAGAAGCCGTGCCGGTGAACCGCCTGCCTGGTTTTTCAGACGGCATTGTTTCGGTACAGG
ACTTCGGCGCGCAGCAGCCGGCGTATTTGTTAAACCCGAAAGACGGCGAACGGATTTTGG
ACGCGTGCGCCGCGCCGGGCGGCAAGACGGGGCATATCTTGGAACTGGCGGATTGCCGTG
TTACCGCCTTGGACATTGATGCAGGCCGTCTGAAACGGGTGGAAGACAATATCGCGCGTC
TGGGCTTTCAGACGGCATCGACGGCGTGTGCCGATGCACAGGACCTGTCGGCATGGTATG
ATGGGAAACCGTTTGATGCCGTCCTTGCCGACGTGCCGTGTACCGCCTCGGGCGTGGCGC
GGCGCAATCCCGACGTGAAATGGCTACGCCGTCCGACCGACGCGCTCAAAACCGCCCGCC
AGCAGGAAGCCCTGCTAGATGCATTGTGGCAGGTGCTGAAAAGCGGGGAAGGATGTTGA
TCGCTACCTGTTCCGTGTTCGTCGAGGAAAACGACGGACAATTGCAAAAATTCCTCAACC
GCCATGCCGATGCAGAACTGATCGAATCGCGGGTACTCTTACCGAACAAACACCAAGATG
GCTTTTATTACGCGCTTATTCAAAAGCAGTAAATGGCTGATTGTGCCGCTGATGCTCCCC

GCCTTTCAGAATGTGGCGGCGGAGGGGATAGATGTGAGCCGTGCCGAAGCGAGGATAACC
GACGGCGGGCAGCTTTCCATCAGCAGCCGCTTCCAAACCGAGCTGCCCGACCAGCTCCAA
CAGGCGTTGCGCCGGGGCGTGCCGCTCAACTTTACCTTAAGCTGGCAGCTTTCCGCCCCG
ATAATCGCTTCTTATCGGTTTAAATTGGGCAACTGATTGGCGATGACGACAATATTGAC
TACAAACTGAGTTTCCATCCGCTGACCAACCGCTACCGCGTTACCGTCGGCGCGTTTTCG
ACAGACTACGACACCTTGGATGCGGCATTGCGCGCGACCGGCGCGGTTGCCAACTGGAAA
GTCCTGAACAAAGGCGCGCTGTCCGGTGCGGAAGCAGGGGAAACCAAGGCGGAAATCCGC
CTGACGCTGTCCACTTCAAAACTGCCCAAGCCTTTTCAAATCAATGCATTGACTTCTCAA
AACTGGCATTTGGATTCGGGTTGGAAACCTCTAAACATCATCGGGAACAAATAATGCGCC
GTTTTCTACCGATCGCAGCCATATGCGCCGTCGTCCTGTTCTACGCACTGACGGCGGCAA
CCGGCAGCACCAGTTCGCTGGCGGATTATTTCTGGTGGATTGTTGCGTTCAGCGCAATGC
TGCTGCTGGTGTTGTCCCCCGTTTTGGCACGTTATGTCATATTGCTGTTCAAAGACAGGC
GCGACGGCGTATTCGGTTCGCAGATTGCCAAACGCCTTTCTGGGATGTTTACGCTGGTTG
CCGTACTGCCCGGCGTGTTTCTGTTCGGCGTTTCCGCACAGTTCATCAACGGCACGATTA
ATTCGTGGTTCGGCAACGATACCCACGAGGCGCTTGAACGCAGCCTCAATTTGAGCAAGT
CCGCATTGAATTTGGCGGCAGACAACGCCCTCGGCAACGCCGTCCCCGTGCAGATAGACC
TCATCGGCGCGGCTTCCCTGCCCGGGGATATCGGCACGGTGCTGGAACATTACGCCGGCA
GCGGTTTTGCCCAGCTTGCCCTCTACAATGCCGCAAGCGGCAAAATCGAAAAAAGCATCA
ACCCGCACAAGCTCGATCAGCCGTTTCCAGGTAAGGCGCGTTGGGAAAAAATCCAACGGG
CGGGTTCGGTCAGGGATTTGGAAAGCATAGGCGGCGTATTGTACGCGCAGGGCTGGCTGT
CGGCGGGTACGCACAACGGGCGCGATTACGCCTTGTTTTTCCGTCAGCCGGTTCCCAAAG
GCGTGGCAGAGGATGCCCTCTTAATCGAAAAGGCAAGGGCGAAATATGCTGAGTTGAGTT
ACAGCAAAAAAGGTTTGCAGACCTTTTTCCTGGCAACCCTGCTGATTGCCTCGCTGCTGT
CGATTTTTCTTGCACTGGTCATGGCACTGTATTTCGCCCGCCGTTTCGTCGAACCCGTCC
TATCGCTTGCCGAGGGCGCGAAGGCGGTGGCGCAAGGCGATTTCAGCCAGACGCGCCCCG
TGTTGCGCAACGACGAGTTCGGACGCTTGACCAAGTTGTTCAACCACATGACCGAGCAGC
TTTCCATCGCCAAAGAAGCAGACGAGCGCAACCGCCGGCGCGAGGAAGCCGCCAGGCATT
ATCTTGAATGCGTGTTGGAGGGGCTGACCACGGGCGTGGTGGTGTTTGACGAACAAGGCT
GTCTGAAAACCTTCAACAAAGCGGCGGAACAGATTTTGGGGATGCCGCTTACCCCCCTGT
GGGGCAGCAGCCGGCACGGTTGCCACGGCGTTTCGGCGCAGCAGTCCCTGCTTGCCGAAG
TGTTTGCCGCCATCGGCGCGGCGGCAGGTACGGACAAACCGGTCCATGTGAAATATGCCG
CGCCGGACGATGCCAAAATCCTGCTGGGCAAGGCAACCGTCCTGCCCGAAGACAACGGCA
ACGGCGTGGTAATGGTGATTGACGACATCACCGTTTTGATACACGCGCAAAAAGAAGCCG
CGTGGGGCGAAGTGGCGAAGCGGCTGGCACACGAAATCCGCAATCCGCTCACGCCCATCC
AGCTTTCCGCCGAACGGCTGGCCTGGAAATTGGGCGGGAAGCTGGATGAGCAGGATGCGC
AAATCCTGACGCGTTCGACCGACACCATCGTCAAACAGGTGGCGGCATTGAAGGAAATGC
TCGAAGCATTCCGCAATTATGCGCGTTCCCCTTCGCTCAAATTGGAAAATCAGGATTTGA
ACGCCTTAATCGGCGATGTGTTGGCATTGTATGAAGCCGGTCCGTGCCGGTTTGCGGCGG
AGCTTGCCGGCGAACCGCTGACGGTGGCGGCGGATACGACCGCCATGCGGCAGGTGCTGC
ACAATATTTTCAAAAATGCCGCCGAAGCGGCGGAAGAAGCCGATGTGCCCGAAGTCAGGG
TAAAATCGGAAACAGGGCAGGACGGTCGGATTGTCCTGACGGTTTGCGACAACGGCAAAC
GGTTCGGCAGGGAAATGCTGCACAACGCCTTCGAGCCGTATGTAACGGACAAACCGGCGG
GAACGGGATTCGGTCTGCCTGTCGTGAAAAAAATCATTGAAGAACACGGCGGCCGCATCA
GCCTGAGCAATCAGGATGCGGGTGGCGCGTGTGTCAGAATCATCTTGCCAAAAACGGTAA
AAACTTATGCGTAGCAGCGATATTTTAATTGTAGACGACGAAATCGGCATCCGCGACCTG
CTGTCGGAAATCCTGCAGGACGAAGGTTATTCGGTCGCATTGGCGGAAAACGCCGAAGAG
GCGCGCAAGCTGCGCCATCAGGCGCGCCCCGCGATGGTGCTGCTGGATATTTGGATGCCT
GATTGCGACGGCATCACCCTTTTGAAGGAGTGGGCGAAAAACGGGCAGCTCAATATGCCG
GTGGTCATGATGAGCGGGCATGCCAGCATCGATACCGCCGTGGAAGCCACCAAAATCGGC
GCGATCGATTTTTTGGAAAAACCGATTTCCCTGCAAAAGCTGCTGTCTGCCGTCGAAAAC
GCGTTGAAGTACGGTGCGGCGCAAACCGAAACGGGGCCTGTATTCGACAAGCTGGGCAAC
AGTGCGGCGATTCAGGAAATGAACCGTGAGGTAGGGGCTGCGGTGAAATGTGCCTCTCCC
GTACTTTTGACGGGCGAGGCGGGTTCGCCGTTTGAAACGGTGGCACGCTATTTCCATAAA
AACGGTACGCCGTGGGTCAGCCCGGCAAGGGTCGAATATCTGATCGATATGCCGATGGAA
CTGTTGCAGAAGGCGGAGGGCGGCGTTTTGTATGTCGGCGACATCGCCCAGTACAGCCGC
AACATCCAAGCCGGTATTGCCTTTATTGTCGGAAAGGCGGAACACCGCCGCGTCAGGGTG
GTCGCATCGGGCAGCAGGGCGGCAGGTTCAGACGGCATTGCCTGCGAGGAAAAGCTGGCG
GAACTGCTGTCGGAATCGGTCGTCCGTATTCCGCCGCTGCGTATGCAGCATGAAGACATT
CCCTTCCTGATACAGGGGATTGCCTGCAATGTGGCGGAAAGCCAAAAGATTGCGCCTGCC
TCATTCAGTGAAGAGGCACTTGCCGCATTGACCCGTTACGACTGGCCGGGAAATTTCGAC
CAACTGCAAAGCGTCGTTGCAACGCTGTTGTTGGAGGCGGACGGACAGGAAATCGGCGCA
GGGGCGGTTTCTTCCCTTTTGGGGCAGAATGTGCCTGCCGAGGGGGCGGAAGATATGGTG
GGCGGGTTTAATTTCAACCTGCCCCTGCGCGAATTGAGGGAGGAGGTGGAGCGGCGTTAT
TTCGAGTACCACATCGCCCAAGAAGGTCAGAATATGAGCCAAGTGGCGCAGAAAGTTGGT
TTGGAACGCACGCACCTTTACCCCAAACTCAAACAGCTCGGCATCGGCGTTTCGCGCCGG
GCGGGGGAAAAAACCGAAGAATAGGCCCGGACGGCCGGTTTACCGGCTGCGGGCTTTTGT
TTTCAGACGGCATTTGGTGCAAATGCCCTCTGAAATCGTAAGGGGACGGATTTTATGACA
GAGGACGAACGTTTCGCGTGGCTGCAATTGGCGTTTACGCCCTATATCGGCGCGGAAAGT
TTCCTGCTGCTGATGCGCCGTTTCGGCAGCGCGCAAAATGCCCTGTCCGCACCGGCGGAA
CAGGTGGCGGCACTGATACGGCACAAACAGGCGCTTGAGGCTTGGCGCAATGCGGAAAAA
CGCGCTCTGGCGCGGCAGGCGGCAGAAGCGGCATTGGAATGGGAAATGCGGGACGGATGC
CGCCTGATGCTGCTTCAGGATGAAGATTTTCCCGAAATGCTGACGCAGGGGCTGACCGCG
CCACCGGTTTTGTTTTTGCGCGCCAACGTGCAACTGCTGCACAAACCTTCCGCCGCCATC
GTCGGCAGCCGTCATGCCACGCCGCAGGCGATGCGGATTCCCAAAGATTTCGGCAAGTCG
TTGGGTGGGAAAGGCATTCCCGTTGTGTCGGGTATGGCTTCGGGCATCGATACCGCCGCC

CATCAGGGTGCGTTGCAGGCAGAAGGCGGCACCATCGCCGTGTGGGGACGGGCATAGAC
CGCATTTATCCGCCGGTCAACAAAAACCTTGCCTATGAAATCGCCGAAAAAGGATTGATT
GTCAGCGAGTTCCCCATCGGCACGCGGCCGTATGCCGGCAATTTTCCGCGCCGCAACCGC
CTGATTGCCGCCCTGTCGCAAGTAACGCTGGTGGTTGAAGCCGCGTTGGAATCCGGTTCG
CTGATTACTGCCAGATTGGCGGCGGAGATGGGGCGCGAAGTGATGGCGGTACCCGGCTCG
ATAGACAATCCACACAGTAAAGGCTGCCACAAACTGATTAAAGACGGCGCAAAATTGGTG
GAATGCCTGGACGACATCCTGAACGAATGCCCGGGGCTATTGCAAAATACGGGTGCTTCA
TCATATTCTATAAATAAGGGAATACCTGAAAAGCGCATCACTGCCGTTCAGACGGCATCC
GACCAGCTGTCTCTGCCTGAAGGCAAAATGCCGTCTGAAAAGACGGAGAACCGACCCGTC
GGCGGCAGTATCTTGGACAGGATGGGTTTCGACCCAGTTCATCCCGACGTGCTTGCCGGA
CAGTTGGCTATGCCTGCCGCAGATTTGTATGCCGCACTGTTGGAATTGGAATTGGACGGC
AGCGTTGCCGCAATGCCCGGCGGCAGATACCAGCGTATCCGAACTTGAACGCACTTTATA
TTAAGGAACACGAATGACCGAAGTCATCGCCTACCTCATCGAACATTTCCAAGATTTCGA
TACCTGCCCGCCGCCCGAAGACTTGGGTATGCTGCTTGAAGAAGCGGGTTTCGATACGAT
GGAAATCGGCAACACCCTGATGATGATGGAAGTATTGCTCAACAGCTCCGAATTTTCCGC
CGAACCCGCCGACAGCGGCGCATTGCGCGTGTACAGCAAAGAAGAAACCGACAACCTGCC
GCAGGAAGTGATGGGGCTGATGCAGTATCTGATTGAAGAAAAAGCCGTCAGCTGCGAACA
GCGGGAAATCATCATCCACGCGCTCATGCACATTCCGGGCGACGAAATTACCGTAGATAC
CGCCAAAGTGCTGACCCTGCTGCTTTTATGGGCAAACAAGAGCGAGCTGCCCGTGTTGGT
CGGCGACGAGCTGATGAGCGCGCTTTTACTCGACAACAAACCCACGATGAACTGAAGCGG
CTTCAGACGGCCCGCCCGAGTCCGTCTGAAACGTCGGCATCAAAACCACCATCCAGAGAA
CGACAAATGGCGAAAAACCTATTAATCGTCGAATCCCCGTCCAAAGCCAAAACCCTGAAA
AAATATTTGGGCGGCGATTTTGAAATCCTTGCATCCTACGGACACGTCCGCGACCTCGTC
CCCAAAAGCGGCGCGGTCGATCCCGACAACGGCTTTGCGATGAAATACCAACTCATCAGC
CGCAACGGCAAACACGTCGATGCCATCGTCGCCGGTGCCAAAGAAGCTGAAAACATCTAC
CTCGCCACCGACCCGGATAGGGAAGGCGAAGCCATTTCCTGGCATCTTTTGGAAATCCTC
AAATCCAAACGCGGCTTGAAAAACATCAAGCCGCAGCGTGTCGTGTTCCACGAAATCACC
AAAAACGCCGTGCTCGATGCCGTTGCCCATCCGCGCGAAATCGAAATGGACTTGGTCGAT
GCGCAACAAGCCCGTCGCGCTTTGGACTATTTGGTCGGTTTCAACCTTTCGCCATTGTTG
TGGAAAAAAATCCGTCGCGGTTTGAGCGCGGGCCGTGTACAAAGCCCCGCACTGCGTTTG
ATTTGCGAACGCGAAAACGAAATCCGCGCGTTTGAAGCGCAGGAATATTGGACGGTACAT
CTAGACAGCCACAAAGGCCGCAGCAAGTTCACCGCCAAACTCGCCCAATACAACGGCGCG
AAACTCGAACAATTCGACCTGCCGAACGAAGCCGCTCAAGCCGATGTGTTGAAAGAACTC
GAAGGCAAAGAGGCCGTCGTTACCGCCATCGAAAAGAAAAAGCGCAGCCGCAACCCCGCC
GCGCCGTTTACCACATCCACCATGCAGCAGGATGCTGTGCGCAAACTCGGCTTCACCACC
GACCGCACCATGCGTACCGCCCAGCAGCTTTACGAAGGTATTGACGTAGGGCAGGGTGCC
ATCGGTCTCATTACCTATATGCGTACCGACAGCGTGAACTTGGCGGATGAAGCCTTAACC
GAAATCCGCCATTACATTGAAAACAAAATCGGCAAAGAATATCTGCCGAGTGCCGCCAAA
CAATACAAAACCAAATCCAAAAACGCCCAAGAAGCGCACGAAGCCATCCGCCCGACTTCC
GTGTACCGCACGCCCGAAAGCGTCAAACCCTTCCTGAGCGCCGACCAGTTCAAACTCTAT
CAAATGATTTGGCAGCGTACCGTCGCCTGTCAGATGACGCCCGCCAAATTCGACCAAACC
ACCGTCGATATTACCGTCGGCAAAGGCGTATTCCGCGTAACCGGACAAGTGCAAACCTTC
GCAGGCTTCCTCAGCGTTTACGAAGAAAGCAGCGACGATGAAGAAGGCGAAGACAGCAAA
AAACTGCCCGAAATGAGCGAAGGCGACAAATTGCCCGTGGACAAACTCTACGGCGAACAA
CACTTTACCACTCCGCCGCCACGCTACAACGAAGCCACGCTGGTTAAAGCCCTCGAAGAA
TACGGCATCGGCCGCCCCTCGACCTACGCCAGCATCATCTCCACGCTCAAAGACCGCGAA
TACGTTACCCTTGAGCAAAAACGCTTTATGCCCACCGACACAGGCGACATCGTCAATAAA
TTCCTGACCGAACACTTCCCCCAATACGTCGATTACCACTTCACTGCCAAACTCGAAGAC
CAGCTTGACGAAATTGCCGACGGCAAACGCCAATGGATTCCCTTGATGGACAAATTCTGG
AAACCGTTCATCAAACAAGTGGAAGAAAAAGAAGGCATCGAACGCGCCAAATTTACCACG
CAGGAACTTGATGAAACCTGCCCGAAATGCGGCGAACACAAACTGCAAATCAAATTCGGC
AAAATGGGTCGTTTTGTTGCGTGTGCCGGTTATCCCGAGTGCAGCTACACGCGCAATGTC
AACGAAACCGCCGAAGAAGCTGCCGAACGCATCGCCAAAGCCGAAGCCGAACAGGCCGAA
CTCGACGGACGCGAGTGCCCGAAATGTGGCGGTCGCCTAGTGTACAAATACAGCCGCACC
GGCAGCAAATTCATCGGCTGCGTCAACTATCCGAAATGCAAACACGTCGAGCCGCTGGAA
AAACCGAAAGATACCGGCGTCCAGTGTCCGCAATGCAAAAAAGGCAACCTCGTCGAGCGC
AAATCCCGCTACGGCAAACTGTTTTACAGTTGCAGCACCTATCCCGACTGCAACTACGCC
ACTTGGAACCCGCCCGTTGCCGAAGAATGCCTGAACTGCCATTGGCCGGTCTTGACCATC
AAAACCACTAAACGCTGGGGTGTAGAAAAAGTCTGCCCACAAAAAGAATGCGGCTGGAAA
GAACAGATTGAACCGCCCGCGCCGAAGGAGTAAGATTAGGTTGGTTTGAAAGAGAAAAGG
TCGTCTGAAAAATTTTCAGACGACCTTTGCTTTTCTGTGATTGGTTTATTTGAATCCGCG
TGTTGTTTTAAAGTCCGATAAAATCCGGTTCATTTCAGGCGCAAACAAGGCGATGTAATC
GTAAGATAGACCGCGACTGGCACTGGGATGGGGAAAGCAGACGACTTCGCAATCTTCAAA
CGATTGGAATTTGACATTGAAACGTGTACCGTCAAATTCTTTTTGCACCGTCTCCAGCGG
TTTGGTCTGCTTACCGACCAACTGCTCGAAGCGTGGCAGTACATTTTGGTTGTTCAGAAA
ATCCGCCAACCTGCTGCCCATGAAGAGGATGACTTTCGGACGCAGTTTTTCGATGTGGTA
GAGAAAATTATCGATGTGCTCGGGTTGTGTGAACTTGTCGGGATTGTCGATAGTGTTGCC
CTGTGTAGCAGCCCAGTTGGTTTGAACCAGGGATTTTTCAAATGCACCGCCCAATCCATT
TTCGTCTAAGGGGTGTCCCCACATTTCAAACCAATTTTTTATCGTATTGTCGTAACGCCA
CTTTTTTGCCTGCTCTCCGAAATAGAGGGATTTGTTTGCAAATGTATGGTCGATTTTGTT
TTCAGGGAGTTTGTATTCACCTGCTACATAAGCAGCCTCATCGGCTTTACTCCAACCCCA
TTCATAGCCACAAATCATTAAGCCATGTTTGTCGTTGTAGCCTTTGAACAGGCTGTTGCT
CAAATTCAAATCCTTCATCATGAACTCTTCCTTTTAAAATTTAAGAGCGATTGACTTCAA
TGTTTTTAGATGGGGTGGAAAAATCCTTGTGTAGGCAACATAAATTCAATAAATTTCTTG
ATAATTCGAAACCTACTAATAGCGCACCTATAAAAGCTTTTTCATTACGTTCAGCATGAC

GGTCACGTCGTTCATATTTTTTACGCTTGCTGTTCCCTGTTATTACAGCTAAGCCAAGTG
ATATGGCGAGAATTGCCCAAACAATAGTACTTAATAACAATTTTCCCCATACTATCAATA
AGGAAAGAAAAAACCTTTTAGTATTAGATCGATAGGTTATAATCCATGCCCATGAAAATG
CAATAAGAGTTATACATAAGATACAAGCTGACAGGATTTCTTTATTTTTAATTAAATAAC
TTAGAGCGATGAGGATGACAGGTGTCAAGAAAATAATAGTTACATCCCGATAGCTATAAA
AGAAAACTGCCCTATTTTGAATGTGGAGATGTGCACAGAATCCAATATAGCTAAGGATAA
TAGTTAATATAATAAAAAAAGACCACCAAGGGTGAAGAGATAGGAATTCCATGTTTTCCC
TTTTTTTGTAAAAAGGAAAAAATCTTATCTAATAGTTAATTGCCTAACCAGCCAGAAGAA
GTTTAAAATCTATCCCAATAATTCAACCATCTATACAGAAAGTTCAGCTTATGGAAACCC
ACGAAAAAATCCGCCTGATGCGCGAATTGAATAAATGGTCCCAGGAGGATATGGCGGAAA
AGCTGGCGATGTCGGCAGGCGGGTATGCCAAAATCGAACGGGGCGAAACGCAGTTAAATA
TCCCGCGTTTGGAGCAGTTGGCTCAGATTTTCAAAATCGATATGTGGGACTTGCTCAAAT
CGGGCGGTGGTGGGATGGTGTTTCAGATTAATGAAGGTGATAGTGGTGGCGATATTGCGT
TGTATGCGTCGGGTGATGTTTCGATGAAAATAGAATTTTTAAAAATGGAGTTGAAACACT
GCAAAGAAATGTTGGAACAAAAAGACAAAGAAATCGAGCTGCTCCGCAAGCTGACCGAAA
CCGTTTAAACAGATATGCCGTCTGAAAAAAGTTTTCAGACGGCATATTCTTTGACAGGTC
TTGTATAATACCGTTTGAACTTACAGGTTTTTGATTATGGCGGCAGGCAAACATACCAAA
CACAGCAACCGGGTACGCATTATCGGCGGGCAATGCCGGGGCAGGAAATTGAGTTTCACA
TCCGCCgACGGACTGCGTCCGACACCCGACAGCGTGCGTGAAAAGCTGTTTAACTGGCTG
GGACAGGATTTGACGGGTAAAACGGTTTTGGATCTCTTCGGAGGCAGCGGCGCACTCGGT
ATAGAAGCCGCTTCGCGCAACGCCAAACGCGTGCTGATTTCGGATAACAACCGCCAAACC
GTGCAGACCTTGCAGAAAAACAGTCGCGAACTGGGTTTGGGGCAGGTGCAAATCGTCTTT
TCAGACGGCATCGCATATTTGAAGACCGTATCCGAACAGTTTGATGTTGTCTTTCTCGAC
CCGCCGTTTGCATGGCAGGACTGGCAAATCCTGTTCGATGCCTTGAAGCCGTGCCTGAAC
CCCCGGGCATTCGTCTATCTCGAGGCGGGTACGCTGCCGAATATTCCCGATTGGCTGACG
GAATATAGAGAAGGGAAATCGGGGCAGAGTACATTTGAATTAAGGGTTTTCCAAGTGGCT
GAATAATATGCGCTTTGATAATCATTTCCGAGTTGTAAACATTCGTTTGCAACCGTCCGG
TTCAAAAAAACCTTGTGCTATAATCCGCGCCCGCCCGGTTTTGATAATTTAGTGGAAAAG
GAAAAGAAATGTCGCTTTTTATTACCGACGAGTGCATCAACTGCGACGTATGCGAACCCG
AATGCCCCAATGATGCCATTTCCCAAGGCGAGGAAATTTACGAAATCAACCCCAACCTCT
GCACGCAGTGCGTCGGACACTACGATGAGCCGCAGTGCCAGCAGGTTTGCCCGGTGGACT
GCATCCTGATTGACGAAGAACATCCCGAAACCCATGACGAGTTGATGGCGAAATACGAAA
AGATTATCCAGTTTAAATAAATTCTTTTTAAAACATCAAATTATGTCTGTTTTGAAATAA
AATCAAAAAAAAAACTTGACGGAAAAGCAAGCCGCTAATAAACTAACGTTCTCTTTTGGAG
GGATTCCCGAGCGGTCAAAGGGGGCAGACTGTAAATCTGTTGCGAAAGCTTCGAAGGTTC
GAATCCTTCTCCCTCCACCAAAATTCTTACTTGGGGCAGTAGCGAGTAATGCGGGTGTAG
CTCAATGGTAGAGCAGAAGCCTTCCAAGCTTACGGTGAGGGTTCGATTCCCTTCACCCGC
TCCAAACAATTAGGCCCATGTAGCTCAGGGGTAGAGCACTCCCTTGGTAAGGGAGAGGTC
GGCAGTTCAAATCTGCCCATGGGCACCATCTCTCGATTATTCATTTCTTTAAGGCTTAGA
TATATAGGATATTGCCATGGCTAAGGAAAAATTCGAACGTAGCAAACCGCACGTAAACGT
TGGCACCATCGGTCACGTTGACCATGGTAAAACCACCCTGACTGCCGCTTTGACTACTAT
TTTGGCTAAAAAATTCGGCGGTGCTGCAAAAGCTTACGACCAAATCGACAACGCACCCGA
AGAAAAAGCACGCGGTATTACCATTAACACCTCGCACGTGGAATACGAAACCGAAACCCG
CCACTACGCACACGTAGACTGCCCGGGGCACGCCGACTACGTTAAAAACATGATTACCGG
CGCCGCACAAATGGACGGTGCAATCCTGGTATGTTCCGCAGCCGACGGCCCTATGCCGCA
AACCCGCGAACACATCCTGCTGGCCCGCCAAGTAGGCGTACCTTACATCATCGTGTTCAT
GAACAAATGCGACATGGTCGACGATGCCGAGCTGTTGGAACTGGTTGAAATGGAAATCCG
CGACCTGCTGTCCAGCTACGACTTCCCCGGCGATGACTGCCCGATTGTACAAGGTTCCGC
ACTGAAAGCCTTGGAAGGCGATGCCGCTTACGAAGAAAAAATCTTCGAACTGGCTGCCGC
ATTGGACAGCTACATCCCGACTCCCGAGCGAGCCGTGGACAAACCGTTCCTGCTGCCTAT
CGAAGACGTGTTCTCCATTTCCGGCCGCGGTACAGTAGTAACCGGCCGTGTAGAGCGCGG
TATCATCCACGTTGGTGACGAGATTGAAATCGTCGGTCTGAAAGAAACCCAAAAAACCAC
TTGTACCGGTGTTGAAATGTTCCGCAAACTGCTGGACGAAGGTCAGGCGGGCGACAACGT
AGGCGTATTGCTGCGCGGTACCAAACGTGAAGACGTGGAACGCGGTCAGGTATTGGCTAA
ACCGGGTACTATCACTCCTCACACCAAATTCAAAGCAGAAGTATACGTACTGAGCAAAGA
AGAGGGTGGTCGTCACACTCCGTTCTTCGCCAACTACCGTCCGCAATTCTACTTCCGTAC
CACCGACGTAACCGGCGCGGTTACTTTGGAAGAAGGTGTAGAAATGGTAATGCCGGGTGA
AAACGTAACCATCACCGTAGAACTGATTGCGCCTATCGCTATGGAAGAAGGCCTGCGCTT
TGCGATTCGCGAAGGCGGCCGTACCGTGGGTGCCGGCGTGGTTTCTTCTGTTATCGCTTA
AGTTTAGAGGCCAATAGCTCAATTGGTAGAGTATCGGTCTCCAAAACCGAGGGTTGGGGG
TTCGAGACCCTCTTGGCCTGCCAAATAAAAAATTAACCGGCCTTGTGTCGGTTAATTTTT
TTGTATTTGTTATTTAGTAAACTCTCTTGCCATTTACATGGATTGAGAATAGACAGATGC
TATGATGGATAAATAATATGACAGAACATACGCCTGAAAAAAAGAACGTTAAAGTGGATC
AACTGGTTGTTCAAGATAAAGAATCTGCATCTAATTCCGGTAAGGAAGGGTTTTTTGCAT
ATTTCTCAAATTCTTGGTCCGAATTCAAAAAGGTGGTTTGGCCTAAGCGTGAAGATGCTG
TCAGAATGACTGTATTTGTTATAGTGTTTGTTGCTGTGCTTTCTATATTTATCTATGCGG
CAGATACAGCAATTTCGTGGTTATTTTTTGATGTATTGCTGAGAAGGGAAGGTTGAGATG
TCGAAAAAATGGTATGTTGTACAGGCGTATTCGGGGTTTGAGAAGAATGTCCAACGAATA
TTGGAAGAGCGCATTGCCCGTGAGGAGATGGGAGATTATTTCGGACAAATTCTGGTGCCT
GTAGAGAAAGTTGTTGATATCCGCAATGGTCGTAAGACTATTAGTGAAAGAAAGTCATAT
CCTGGTTATGTGCTAGTTGAGATGGAAATGACAGATGACTCTTGGCATCTTGTAAAAAGC
ACCCCCCGTGTTTCCGGTTTTATTGGAGGGAGGGCTAATAGACCTACGCCGATTAGTCAG
AGAGAGGCTGAAATTATTTTACAGCAGGTTCAGACCGGCATAGAGAAGCCGAAACCAAAA
GTTGAATTTGAGGTCGGTCAACAGGTTCGTGTAAATGAAGGGCCGTTTGCGGATTTTAAC
GGGGTGGTTGAGGAGGTCAATTATGAACGGAATAAGTTACGCGTGTCTGTTCAGATATTT

GGTAGAGAAACACCCGTTGAGCTGGAGTTCAGCCAGGTTGAAAAGATTAACTGATTTTTA
TACTTGAAAAAAAAGCAATAAGAGGATAGAATCAAAAATTAACTTGGGGAGCGGAAATGG
TTCCGCGTCTTACCCGTTTTTAGGAGTTCGTTAAGTGGCAAAGAAAATTATCGGCTATAT
TAAACTGCAAATTCGTGCAGGTAAAGCCAATCCATCTCCTCCGGTTGGTCCTGCTTTGGG
TCAGCGCGGTTTGAATATTATGGAATTTTGTAAGGCATTTAATGCTGCAACCCAAGGTAT
GGAGCCTGGCTTACGGATTCCGGTTGTGATTACTGCATTTGCAGATAAATCATTCACATT
TGTGATGAAAACCCCGCCAGCTTCTATCTTGTTGAAAAAGGCTGCCGGTTTGCAAAAAGG
TAGTTCTAATCCTCTGACCAACAAAGTGGGTAAATTGACCCGTGCCCAGTTGGAAGAAAT
TGCTAAAACTAAAGATCCTGATTTGACTGCTGCTGACTTGGATGCGGCTGTCCGTACTAT
AGCAGGTTCTGCTCGCTCAATGGGCTTGGATGTGGAGGGTGTTGTATAATGGCTAAAGTA
TCTAAACGCTTGAAAGCTCTTCGCTCTTCTGTGGAAGCCAATAAATTATATGCAATTGAT
GAAGCAATTGGTTTGGTAAAAAAAGCAGCGACTGCTAAATTTGACGAGTCTGTTGACGTA
TCTTTCAACTTGGGCGTTGATCCGCGTAAATCTGACCAAGTTATCCGTGGTTCGGTCGTT
CTGCCTAAAGGCACCGGTAAGATAACCCGTGTGGCTGTATTTACTCAAGGTGCAAATGCA
GAAGCTGCTAAAGAAGCTGGTGCAGATATCGTCGGTTTCGAAGATTTGGCTGCTGAAATC
AAAGCAGGCAATCTGAACTTTGATGTCGTTATTGCTTCTCCCGATGCAATGCGTATTGTT
GGTCAGTTGGGTACTATTTTGGGTCGTCGAGGCTTGATGCCAAACCCTAAAGTAGGTACG
GTTACTCCTAACGTTGCTGAAGCAGTTAAGAATGCAAAAGCAGGTCAAGTACAATACCGT
ACAGATAAAGCAGGTATCGTTCATGCAACGATTGGTCGTGCTTCTTTCGCTGAAGCTGAT
TTGAAAGAGAACTTTGATGCGTTGCTGGATGCTATCGTTAAAGCCAAGCCTGCTGCCGCT
AAAGGTCAGTATCTGAAAAAAGTTGCTGTGTCTAGCACCATGGGTTTGGGTATTCGCGTT
GATACATCAAGCGTAAATAAGTAATCTTAAGGAATTTTCAAGCAGTTTGGTTTTCTGGGC
TGCTTGAATTTGGGCTACTTAAAATTAAGTAGATGTCCAAGACCGTAGGGATCGTAAGAT
TTAATCGTAACTGCCGTACGCAGACGGTAGTCCTGAAACACATTGCAAGATTGCTTGTAA
GATGTCTTTTTAGGTTACCGCGCTGGTGGGATATCGTTTTGGTATCCTGTTTATAAACAG
TGGGAGGTAGACCTTGAGTCTCAATATTGAAACCAAGAAAGTGGCGGTCGAGGAAATTAG
CGCGGCAATTGCTAATGCTCAAACCCTCGTAGTCGCTGAATATCGCGGTATCAGTGTTTC
CAGTATGACTGAGCTTCGTGCGAATGCACGTAAAGAAGGCGTTTATTTGCGCGTTCTGAA
AAATACTTTGGCTCGTCGTGCAGTGCAAGGTACTTCATTTGCAGAATTGGCCGATCAAAT
GGTTGGTCCGTTGGTTTACGCTGCTTCTGAAGATGCTGTTGCTGCTGCTAAAGTGTTGCA
CCAATTCGCGAAAAAAGATGACAAAATTGTCGTTAAAGCCGGTTCTTACAATGGCGAAGT
AATGAATGCTGCTCAGGTTGCTGAGTTGGCTTCTATTCCGAGCCGCGAAGAGCTGTTGTC
CAAACTGTTGTTCGTTATGCAAGCTCCTGTATCGGGCTTTGCGCGCGGTTTGGCTGCTTT
GGCAGAGAAAAAAGCCGGCGAAGAAGCCGCTTAATCGATTTTGTTTCTGTTAATCAATTA
TTTTTTAATACAATATTTGGAGTAAAATAGCATGGCTATTACTAAAGAAGACATTTTGGA
AGCAGTTGGTTCTTTGACCGTAATGGAATTGAACGACTTGGTTAAAGCTTTTGAAGAAAA
ATTCGGTGTTTCTGCTGCTGCTGTTGCAGTTGCAGGTCCTGCTGGTGCCGGTGCTGCCGA
TGCTGAAGAAAAAACCGAATTTGATGTCGTTTTGGCTTCTGCCGGCGATCAAAAAGTCGG
CGTGATTAAAGTTGTCCGTGCAATTACCGGTTTGGGTCTGAAAGAAGCTAAAGACATCGT
TGACGGCGCACCTAAAACCATTAAAGAGGGTGTTTCTAAAGCTGAAGCCGAAGACATCCA
AAAACAACTGGAAGAAGCAGGCGCTAAAGTCGAAATCAAATAATTTGATGCTTCTTATGA
AGGCTGGCAGTTTTCTGCGAGCCTTATTTTGCTTCTTAAAATAAACATCAAGTATTGTTT
ACATTTATTTGCATAGTTTTTATCAAGTCATTGCAAATAAATGTAAATATCAGATTGATG
CGTACCGTTGTTTCAGACGGCCTATTATTGAAAATTACTTTTCGGAGTGTGTATGAACTA
TTCGTTTACCGAGAAAAAACGTATCCGTAAGAGTTTTGCAAAGCGGGAAAATGTTTTGGA
AGTTCCTTTCTTGCTAGCAACCCAAATTGATTCTTATGCGAAGTTTTTGCAGCTGGAAAA
TGCTTTTGAGAAACGTACCGATGACGGTCTGCAGGCGGCATTTAATTCTATTTTCCCGAT
TGTGAGCCATAACGGTTATGGGCGATTGGAGTTTGTGCATTACACATTGGGCGAGCCTTT
GTTCGATATTCCCGAATGTCAGTTGCGCGGAATCACTTATGCAGCCCCCTTGCGCGCGCG
TATCCGTTTGGTGATTTTGGATAAGGAAGCATCTAAACCGACGGTAAAAGAAGTTCGTGA
AAACGAAGTGTATATGGGCGAAATTCCGTTGATGACCCCGAGCGGTTCTTTTGTGATTAA
CGGCACAGAGCGTGTGATTGTCTCCGAGTTGCACCGTTCGCCCGGCGTATTCTTCGAGCA
TGACAAAGGTAAGACGCACTCTTCCGGCAAATTGTTATTCTCCGCCCGCATCATTCCCTA
CCGTGGTTCATGGTTGGATTTTGAATTTGATCCGAAAGATTTGCTGTATTTCCGTATCGA
CCGCCGCCGTAAAATGCCGGTAACGATTTTGTTGAAGGCTTTAGGCTACAACAATGAGCA
AATCTTGGATATTTTCTACGACAAAGAAACGTTCTATTTGTCTTCAAACGGTGTTCAAAC
CGATTTGGTTGCAGACCGTCTGAAAGGCGAAACTGCCAAGGTCGATATCTTGGATAAAGA
AGGCAATGTATTGGTTGCCAAAGGTAAGCGCATTACTGCGAAAAATATCCGTGATATTAC
CAATGCAGGCCTGACCCGTTTGGATGTAGAACCGGAAAGCCTGCTGGGCAAAGCATTGGC
TGCCGATCTGATTGATTCGGAAACCGGCGAGGTATTGGCTTCTGCCAATGATGAAATTAC
AGAAGAGTTGTTGGCCAAATTTGATATCAACGGCGTAAAAGAAATTACGACCCTTTATAT
CAATGAGCTGGATCAGGGTGCTTATATCTCCAATACCTTGCGTACGGATGAGACTGCCGG
CCGGCAGGCGGCTCGTGTTGCGATTTACCGTATGATGCGTCCGGGCGAACCGCCCACCGA
AGAGGCGGTCGAGCAATTGTTTAACCGCTTGTTCTTCAGTGAAGACAGCTACGATCTGTC
CCGCGTAGGCCGTATGAAATTTAATACGCGCACATACGAACAAAAACTGTCCGAAGCCCA
ACAAAACTCTTGGTACGGCCGCCTGCTGAACGAAACGTTTGCCGGTGCTGCCGACAAAGG
CGGTTATGTCCTGAGCGTCGAAGATATTGTCGCCTCGATTGCGACTTTGGTCGAGTTGCG
TAACGGCCATGGCGAAGTGGACGATATCGATCACTTGGGCAACCGCCGAGTACGTTCGGT
AGGCGAGCTGACTGAAAACCAATTCCGTAGCGGTTTGGCCCGTGTGGAACGTGCCGTAAA
AGAACGTTTGAATCAGGCGGAATCAGAAAACTTGATGCCGCACGATTTGATTAATGCAAA
ACCTGTTTCTGCCGCTATTAAAGAATTCTTCGGCTCCAGCCAATTGAGTCAGTTTATGGA
TCAGACCAACCCCTTGTCTGAAGTAACCCATAAACGCCGTGTATCTGCATTGGGTCCGGG
CGGTTTGACCCGCGAACGTGCAGGATTTGAGGTGCGGGACGTGGATCCGACCCACTACGG
TCGCGTATGTCCGATTGAAACGCCTGAAGGTCCGAACATCGGTTTGATCAACTCATTGTC
CGTTTATGCGCGCACCAATGATTACGGTTTCTTGGAAACGCCTTACCGCCGCGTTATCGA

CGGCAAAGTAACCGAGGAAATCGATTACTTGTCTGCCATCGAAGAAGGCCGCTATGTGAT
TGCACAGGCGAATGCCGATTTGGATTCAGATGGCAATCTGATTGGCGATTTGGTTACCTG
TCGTGAAAAAGGCGAAACCATTATGGCAACGCCCGACCGCGTCCAATATATGGACGTGGC
AACTGGTCAAGTGGTATCCGTTGCAGCATCCCTGATTCCATTCTTGGAACATGATGACGC
GAACCGCGCATTGATGGGTGCCAACATGCAACGTCAGGCAGTGCCTTGCTTGCGTCCTGA
AAAACCGATGGTCGGTACCGGTATCGAGCGTTCCGTTGCCGTTGACTCTGCTACTGCAAT
CGTTGCCCGCCGAGGCGGCGTGGTCGAGTATGTCGATGCCAACCGCGTTGTGATCCGTGT
CCATGACGACGAAGCGACTGCCGGTGAAGTGGGTGTCGATATTTACAACTTGGTTAAATT
CACCCGTTCCAACCAGTCTACCAATATCAATCAGCGTCCTGCCGTCAAAGCCGGCGATGT
TTTGCAACGCGGCGATTTGGTGGCCGACGGCGCGTCCACCGATTTTGGCGAATTGGCTTT
GGGTCAAAATATGACCATCGCCTTCATGCCGTGGAACGGTTACAACTACGAAGACTCGAT
TCTGATTTCCGAAAAAGTGGCTGCGGACGACCGCTATACTTCGATTCACATTGAGGAATT
GAATGTCGTTGCCCGCGATACTAAGCTGGGTGCGGAAGACATTACCCGCGATATTCCGAA
CTTGTCCGAGCGTATGCAAAACCGTTTGGACGAATCCGGTATCGTTTACATCGGTGCGGA
AGTAGAAGCCGGCGATGTGTTGGTAGGCAAGGTAACGCCTAAAGGCGAAACCCAACTGAC
GCCGGAAGAAAAACTGCTGCGCGCCATCTTCGGTGAAAAAGCATCTGACGTAAAAGATAC
TTCATTGCGTATGCCTACCGGCATGAGCGGTACCGTTATCGACGTTCAAGTCTTCACTCG
TGAAGGTATTCAACGCGACAAACGTGCTCAATCCATTATCGATTCCGAATTGAAACGCTA
CCGTTTGGATTTGAACGACCAATTGCGTATTTTCGACAACGACGCATTCGACCGTATCGA
GCGTATGATTGTCGGTCAGAAAGCCAACGGTGGTCCGATGAAGCTGGCCAAAGGCAGCGA
AATCACGACCGAATATCTGGCGGGTCTGCCGAGCAGGCACGATTGGTTCGATATCCGTCT
GACCGATGAAGATTTGGCCAAGCAGTTGGAACTGATTAAAGTGAGCCTGCAACAAAAACG
CGAAGAAGCGGACGAGTTATACGAAATCAAGAAGAAAAAACTGACCCAAGGCGACGAATT
GCAACCCGGCGTACAAAAAATGGTGAAAGTTTTTATCGCCATCAAACGCCGTCTGCAAGC
CGGCGACAAAATGGCGGGCCGCCACGGTAACAAAGGCGTGGTATCGCGCATTCTGCCAGT
GGAAGACATGCCTTACATGGCGGACGGCCGTCCGGTAGACATCGTACTGAACCCATTGGG
CGTACCTTCCCGTATGAACATCGGTCAGATTTTGGAAGTTCACTTGGGTTGGGCAGCAAA
AGGTATCGGCGAGCGTATCGACCGTATGCTGAAAGAGCAACGCAAAGCAGGCGAGTTGCG
CGAGTTCTTGAACAGACTCTACAACGGCAGCGGTAAGAAAGAAGATTTGGATGCCCTGAC
TGATGAAGAAATCATCGAACTGGCCTCCAACCTGCGCAAAGGTGCATCTTTCGCCTCTCC
TGTATTCGACGGTGCGAAAGAGTCTGAAATCCGCGAAATGCTGAACTTGGCTTATCCGAG
CGACGATCCTGAGGTTGAAAAACTGGGCTTCAACGACAGTAAAACCCAAATCACGCTGTA
TGACGGCCGTTCAGGCGAAGCATTTGACCGCAAGGTTACAGTAGGTGTGATGCACTATCT
GAAACTGCACCACTTGGTTGACGAAAAAATGCACGCGCGTTCTACCGGTCCGTACAGTCT
GGTTACCCAGCAGCCTTTGGGCGGTAAAGCCCAGTTCGGCGGCCAACGTTTCGGCGAGAT
GGAGGTTTGGGCATTGGAAGCATACGGCGCGGCATACACGCTGCAAGAGATGCTGACTGT
GAAGTCTGACGACGTGAACGGCCGTACCAAAATGTACGAAAACATCGTCAAAGGCGAACA
CAAAATCGATGCCGGTATGCCCGAGTCCTTCAACGTATTGGTCAAAGAGATTCGCTCACT
GGGCTTGGATATCGATTTGGAACGTTACTAAACAAAAGTTTTCAGACGGCCTTTCAGGGT
CGTCTGAAAAAGTGGTTTCAGAATAAGAATGAAGCAATCGGCATTTAGGCCGTCTGAAAT
CAAAAGTACCGTTTCCCAATATCGAAAATCCGCCATGCGGTAAAAATACTTCCTTCAAGG
AGCAAAAATGAATTTGTTGAACTTATTTAATCCGTTGCAAACTGCCGGCATGGAAGAAGA
GTTTGATGCCATTAAAATCGGTATTGCCTCTCCCGAAACCATCCGCTCATGGTCTTATGG
CGAAGTCAAAAAACCTGAAACCATCAACTACCGTACGTTCAAACCTGAGCGTGACGGTTT
GTTCTGTGCCAAAATCTTTGGCCCGGTCAAAGACTACGAATGCTTGTGCGGAAAATACAA
ACGCTTGAAATTTAAAGGCGTAACGTGTGAAAAATGCGGCGTGGAAGTAACCCTGTCCAA
AGTGCGCCGCGAACGCATGGGTCATATCGAATTGGCTGCGCCCGTCGCACATATTTGGTT
CTTAAAATCCCTGCCTTCCCGCTTGGGTATGGTGTTAGACATGACTTTGCGCGACATCGA
GCGCGTATTGTACTTTGAAGCATTTGTGGTAACCGATCCCGGTATGACTCCGCTGCAACG
CCGCCAATTGCTGACTGAAGACGATTACTACAACAAGCTGGACGAATACGGCGACGATTT
CGATGCCAAAATGGGTGCGGAAGGTATCCGCGAATTGCTGCGTACCCTGAATGTAGCGGG
CGAAATCGAAATCCTGCGCCAAGAGTTGGAATCGACCGGTTCCGACACCAAAATCAAAAA
AATCGCCAAACGCTTGAAAGTATTGGAAGCCTTCCATCGTTCCGGTATGAAACTGGAATG
GATGATTATGGATGTGCTGCCGGTATTGCCGCCTGATTTGCGTCCGTTGGTTCCATTGGA
TGGTGGTCGTTTTGCCACTTCCGATTTGAACGATTTGTACCGCCGCGTTATTAACCGTAA
CAACCGTCTGAAACGTCTGTTGGAACTGCATGCGCCTGACATCATCGTCCGCAACGAAAA
ACGTATGTTGCAAGAAGCAGTTGACTCGCTGTTGGATAACGGCCGTCGCGGTAAAGCCAT
GACCGGCGCCAACAAACGCCCGCTGAAATCATTGGCAGACATGATTAAAGGTAAAGGCGG
TCGCTTCCGTCAAAACCTGTTGGGCAAACGTGTGGACTACTCCGGCCGTTCCGTGATTAC
CGTAGGCCCGTACCTGCGTCTGCACCAATGCGGTTTGCCGAAAAAAATGGCTTTGGAACT
GTTCAAACCGTTCATTTTCCACAAATTGGAAAAACAAGGTTTGGCCTCTACCGTTAAAGC
AGCGAAAAAATTGGTAGAGCAAGAAGTACCGGAAGTATGGGACATCTTGGAAGAAGTCAT
CCGCGAACATCCGATTATGCTGAACCGTGCGCCGACCCTGCACCGTTTGGGTATTCAAGC
GTTCGAACCTATCTTGATTGAAGGTAAAGCGATTCAGTTGCACCCATTGGTGTGTGCTGC
GTTCAACGCCGACTTTGACGGCGACCAAATGGCGGTACACGTTCCATTGAGCTTGGAAGC
ACAAATGGAAGCACGCACGCTGATGCTGGCTTCAAACAACGTATTGTCTCCGGCCAACGG
CGAACCGATTATCGTACCTTCCCAAGACATCGTATTGGGCCTGTACTATATGACTCGCGA
TCGTATCAATGCCAAAGGCGAAGGCAGCCTGTTTGCCGATGTGAAAGAAGTGCATCGCGC
ATACCATACCAAACAGGTCGAGCTGGGTACGAAAATCACCGTACGTCTGCGCGAATGGGT
GAAAAACGAAGCAGGTGAGTTTGAGCCTGTCGTTAACCGTTACGAAACAACCGTCGGCCG
TGCATTGTTGAGCGAAATCCTGCCGAAAGGCCTGCCGTTTGAATATGTCAACAAAGCGTT
GAAGAAAAAAGAAATTTCTAAACTGATTAACGCATCGTTCCGCCTGTGCGGCTTGCGCGA
TACGGTTATCTTTGCTGACCACCTGATGTACACCGGTTTCGGATTTGCGGCAAAAGGCGG
TATTTCCATTGCCGTTGACGATATGGAAATTCCAAAAGAAAAAGCGGCCTTGCTGGCTGA
AGCCAATGCCGAGGTTAAAGAAATCGAAGACCAATACCGTCAAGGTTTGGTTACCAACGG

CGAACGCTACAACAAGGTGGTCGATATTTGGGGTCGTGCCGGCGATAAGATTGCTAAAGC
GATGATGGACAACTTGTCCAAACAAAAAGTTATCGACCGTGCCGGCAACGAAGTCGATCA
AGAGTCATTCAACTCCATTTATATGATGGCGGACTCCGGTGCCCGTGGTTCTGCAGCTCA
GATTAAACAGTTGTCCGGTATGCGTGGCTTGATGGCAAAACCTGACGGCTCGATTATTGA
AACGCCGATTACCTCAAACTTCCGTGAAGGTCTGACCGTATTGCAATACTTTATTGCGAC
CCACGGTGCGCGTAAGGGTTTGGCGGATACCGCATTGAAAACCGCGAACTCCGGTTACCT
GACTCGTCGTCTGGTAGACGTAACTCAAGATTTGGTCGTTGTTGAAGACGATTGCGGTAC
TTCAGACGGCTTTGTCATGAAGGCAGTGGTACAAGGCGGTGATGTGATTGAAGCATTGCG
CGATCGTATTTTGGGTCGTGTTACCGCGTCTGACGTTGTCGATCCGTCAAGTGGCGAAAC
CTTGGTTGAAGCCGGTACGTTGCTGACTGAAAAACTGGTGGATATGATCGACCAATCCGG
TGTCGATGAAGTCAAAGTCCGTACGCCGATTACTTGTAAAACCCGTCACGGCCTGTGTGC
ACACTGTTACGGTCGTGACTTGGCACGCGGCAAACTGGTTAACGCCGGTGAGGCAGTCGG
TGTGATTGCTGCACAATCCATTGGCGAACCGGGTACCCAGTTGACCATGCGTACGTTCCA
CATCGGTGGTGCGGCATCCCGTGCGGCAGCAGCCAGCCAAGTGGAAGCCAAATCCAACGG
TACGGCACGATTCAGCAGCCAGATGCGCTACGTTGCCAACAACAAAGGCGAGTTGGTTGT
CATCGGCCGTTCTTGTGAAGTCGTGATTCACGACGATATCGGCCGTGAACGCGAACGCCA
CAAAGTACCTTACGGTGCCATCCTGCTGGTACAAGACGGTATGGCCATTAAAGCCGGTCA
AACCTTGGCAACCTGGGATCCGCATACCCGTCCGATGATTACCGAACACGCAGGTATGGT
GAAATTCGAAAACGTGGAAGAGGGCGTTACCGTTGCCAAACAAACCGATGATGTAACCGG
TTTGTCCACTTTGGTGGTGATTGACGGTAAACGTCGTTCCTCTAGTGCTTCCAAACTGCT
GCGTCCGACTGTGAAACTCTTGGACGAAAACGGCGTGGAAATCTGTATTCCCGGTACTTC
TACTCCGGTATCCATGGCATTCCCCGTTGGTGCGGTGATTACCGTACGCGAAGGTCAGGA
AATCGGTAAAGGCGACGTATTGGCGCGTATTCCGCAAGCCTCTTCCAAAACCCGCGACAT
TACCGGCGGCCTGCCGCGCGTTGCCGAATTGTTTGAAGCACGCGTGCCGAAAGATGCCGG
TATGTTGGCGGAAATTACCGGTACCGTTTCCTTCGGCAAAGAGACCAAAGGCAAGCAACG
TCTGATTGTTACTGACGTGGACGGTGTAGCATACGAGACCTTGATTTCCAAAGAGAAACA
AATTCTGGTACACGACGGTCAAGTGGTAAACCGCGGTGAAACCATCGTGGACGGCGCGGT
CGATCCGCACGATATTCTGCGTTTGCAAGGTATCGAAGCACTGGCACGCTACATTGTCCA
AGAGGTGCAAGAGGTTTACCGTCTGCAAGGTGTGAAGATTTCTGATAAACACATCGAAGT
CATCATCCGTCAAATGTTGCGCCGTGTGAACATTGCGGATGCCGGCGAAACCGGGTTCAT
TACCGGAGAGCAGGTCGAACGCGGCGATGTGATGGCGGCCAATGAAAAAGCTTTGGAAGA
AGGCAAAGAACCGGCGCGTTACGAAAACGTATTGCTGGGTATTACCAAAGCTTCCCTGTC
CACCGACAGCTTCATTTCTGCCGCATCGTTCCAAGAAACGACCCGCGTTCTGACCGAAGC
CGCGATTATGGGCAAACAAGACGAGTTGCGTGGTTTGAAAGAAAACGTCATCGTCGGTCG
CTTGATTCCTGCCGGTACCGGTTTGACTTACCACCGCAGCCGTCATCAACAATGGCAAGA
GGTGGAACAGGAGACTGCCGAAACCCAAGTAACGGATGAATAATCTTTGGTGCATCCATT
CAATAAAAAACCGCAAGCCTTGAGCTTGCGGTTTTTCTTTGTCCGATTAAGGCAAAAACA
AGCGTTTTCGTCATTTTGAGGCGTGTGGATTATTCCTTAGGTATTTTCGGGCCGGAGACC
AACGAGGTGGCGGGTGTCGTCGGTACGTCCGGAGACCAAAATAACTTTGCCAGGGATGTT
GGTTTCGGCGGTCAAAAAAAGTAGCGTCTTAATGTTTTCCATTTAAACAAATGTCGTCTG
AAACTTCAGACGGCATTTCCTTTAAGAAATAAATATGAAACCCAGAAATCTCTTTTTTGC
AGGCTGCCTGCTGACTTCGGCGACGTTTGCCGAGGATATCGGCGTACCTGTCGAACTGAT
TAACGTCGGTAATCGGATTGCGATGCCGTCTGAAGGGGAAAGCCTCGCCCTCCTGCCGTT
TGCCGAGGATGTACCGCCGGTTCGCGATGCAATGCCGTCTGAAGTTCCTAAAAGCGCGGC
AGGCGGCGATGTTCGGGGTGACCGGATGAGAATGCCGATTAACATCGGATGAGCGCGGCT
TTATGGCATAAAAAACTGTCGTGGAAAGGATTTACACCCCAAATAAATTTCCGTTACAAC
AAGATCAACAGCAATATGCCCGCCTTTTATTCGCGCAGCGGCAAGGAACGGTTTGTCAGT
ATAGAAAAAACGTATTGACAGTATTTTCTTCAGTCGTCCGACTGATTGTGAGGGATGTCG
GTAAATATTTATCGGCAAACAAGAAAATCATCTTTCTTCTTGTCGTTATGCTTGACTGTC
TGCTTGCAATAAAAATATAATTCCACTCTTGCCGACATGGTGTCGGCAAGTATTTAACTC
AACAGGACGAGAAAATATGCCAACTATCAACCAATTAGTACGCAAAGGCCGTCAAAAGCC
CGTGTACGTAAACAAAGTGCCCGCACTGGAAGCTTGCCCGCAAAAACGTGGCGTGTGCAC
CCGTGTATACACAACTACCCCTAAAAAACCTAACTCTGCATTGCGTAAAGTATGTAAAGT
CCGCCTGACCAACGGTTTTGAAGTCATTTCATACATCGGCGGCGAAGGTCACAACCTGCA
AGAGCACAGTGTCGTATTGATTCGCGGCGGTCGTGTAAAAGACTTGCCAGGTGTGCGTTA
CCACACTGTACGCGGTTCTTTGGATACTGCAGGTGTTAAAGACCGTAAACAAGCCCGTTC
CAAATACGGTGCTAAGCGTCCTAAATAATTACTGGGACTTAAATAGGCACGTCGGCCGCC
TAAGCTGAACAACGGCCGAGTAAGTGAATACTCAATTGGGTATTCATGGGAATAGACCCG
ACTGAATAGATTAAAGGAAATTAAAATGCCAAGACGTAGAGAAGTCCCCAAGCGCGACGT
ACTGCCAGATCCTAAATTCGGCAGCGTCGAGTTGACCAAATTCATGAACGTATTGATGAT
TGACGGTAAAAAATCCGTTGCCGAGCGTATCGTTTACGGTGCGTTGGAACAGATTGAGAA
AAAAACCGGCAAAGTAGCAATCGAAGTATTTAACGAAGCCATTGCAAACGCCAAACCTAT
CGTGGAAGTGAAAAGCCGCCGTGTAGGTGGTGCAAACTACCAAGTTCCTGTTGAAGTTCG
TCCTTCACGCCGTTTGGCTTTGGCAATGCGCTGGGTTCGCGATGCGGCCCGCAAACGTGG
TGAGAAATCCATGGACCTGCGTTTGGCAGGCGAATTGATTGATGCGTCCGAAGGCCGTGG
CGGTGCGTTGAAAAAACGTGAAGAAGTACACCGTATGGCTGAAGCCAACAAAGCATTCTC
TCACTTCCGTTTCTAATTTTGAAAGGCTAATAAAATGGCTCGTAAGACCCCGATCAGCCT
GTACCGTAACATCGGTATTTCCGCCCATATTGACGCGGGTAAAACCACGACGACAGAACG
TATTTTGTTCTATACCGGTTTGACCCACAAGCTGGGCGAAGTGCATGACGGTGCGGCTAC
TACCGACTACATGGAACAAGAGCAAGAGCGCGGTATTACCATTACCTCCGCTGCCGTTAC
TTCCTACTGGTCCGGTATGGCGAAACAATTCCCCGAGCACCGCTTCAACATCATCGACAC
CCCGGGACACGTTGACTTTACCGTAGAGGTAGAGCGTTCTATGCGTGTATTGGACGGCGC
GGTAATGGTTTACTGCGCGGTGGGCGGTGTTCAACCCCAATCTGAAACCGTATGGCGGCA
AGCCAACAAATACCAAGTGCCGCGCTTGGCGTTTGTCAATAAAATGGACCGTCAGGGTGC
CAACTTCTTCCGTGTTGTCGAGCAAATGAAAACCCGTTTGCGCGCAAACCCTGTACCTAT

CGTCATTCCGGTTGGTGCGGAAGACAACTTCAGCGGTGTGGTTGATTTGTTGAAAATGAA
ATCCATCATTTGGAATGAAGTCGATAAAGGTACAACCTTTACCTATGGCGATATTCCTGC
CGAATTGGTCGAAACTGCCGAAGAATGGCGTCAAAATATGATTGAAGCCGCAGCCGAAGC
CAGCGAAGAACTGATGGACAAATACTTAGGCGGCGACGAGCTGACCGAAGAAGAAATCGT
AGGCGCGTTGCGTCAACGTACTTTGGCAGGCGAAATTCAGCCTATGCTGTGTGGTTCTGC
ATTTAAAAACAAAGGTGTTCAACGTATGTTGGACGCAGTTGTAGAATTGCTGCCAGCTCC
TACCGATATTCCTCCGGTTCAAGGTGTCAACCCGAATACCGAGGAAGCCGACAGCCGTCA
AGCCAGCGATGAAGAGAAATTCTCTGCATTGGCGTTCAAAATGTTGAACGACAAATACGT
CGGTCAGCTGACCTTTATCCGCGTTTACTCAGGCGTAGTAAAATCCGGCGATACCGTATT
GAACTCCGTAAAAGGCACTCGCGAACGTATCGGTCGTTTGGTACAAATGACTGCCGCAGA
CCGTACTGAAATCGAAGAAGTACGCGCCGGCGACATCGCAGCCGCTATTGGTCTGAAAGA
CGTTACTACCGGTGAAACCTTGTGTGCGGAAAGCGCGCCGATTATCTTGGAACGTATGGA
ATTCCCCGAGCCGGTAATCCATATTGCCGTTGAGCCGAAAACCAAAGCCGACCAAGAGAA
AATGGGTATCGCCCTGAACCGCTTGGCTAAAGAAGACCCTTCTTTCCGTGTCCGTACAGA
CGAAGAATCCGGTCAAACCATTATTTCCGGTATGGGTGAGCTGCACTTGGAAATTATTGT
TGACCGTATGAAACGCGAATTCGGTGTGGAAGCAAATATCGGTGCGCCTCAAGTGGCTTA
CCGTGAAACTATCCGCAAAGCCGTTAAAGCCGAATACAAACATGCAAAACAATCCGGTGG
TAAAGGTCAATACGGTCACGTTGTGATTGAAATGGAACCTATGGAACCGGGTGGTGAAGG
TTACGAGTTTATCGATGAAATTAAAGGTGGTGTGATTCCTCGCGAATTTATTCCGTCTGT
CGATAAAGGTATCCGCGATACGTTGCCTAACGGTATCGTTGCCGGCTATCCTGTAGTTGA
CGTACGTATCCGTCTGGTATTCGGTTCTTACCATGATGTCGACTCTTCCCAATTGGCATT
TGAATTGGCTGCTTCTCAAGCGTTTAAAGAAGGTATGCGTCAAGCATCTCCTGCCCTGCT
TGAGCCAATCATGGCAGTTGAAGTGGAAACCCCGGAAGAATACATGGGCGACGTAATGGG
CGACTTGAACCGCCGTCGCGGTGTTGTATTGGGTATGGATGATGACGGTATCGGCGGTAA
AAAAGTCCGTGCCGAAGTACCTTTGGCAGAAATGTTCGGTTACTCGACCGACCTGCGTTC
TGCAACCCAAGGCCGCGCTACTTACTCTATGGAGTTCAAGAAATATTCTGAAGCTCCTGC
CCACATAGCTGCTGCTGTAACTGAAGCCCGTAAAGGCTAATCAGAAAAGGCCGTCTGAAA
CTGAAAATAAATTTTCAGACGGCCATTGTTCTTTAATCGATCTTTATATGTAAAGGAATT
AGCTCATGGCTAAGGAAAAATTTGAACGTAGCAAACCGCACGTAAACGTTGGCACCATCG
GTCACGTTGACCATGGTAAAACCACTCTGACTGCTGCTTTGACTACTATTTTGTCTAAAA
AATTCGGTGGCGCTGCAAAAGCTTATGACCAAATCGACAACGCTCCTGAAGAAAAAGCTC
GTGGTATTACCATTAATACCTCACACGTAGAATACGAAACTGAAACCCGTCACTACGCAC
ACGTAGACTGCCCGGGCACGCCGACTACGTTAAAAACATGATTACCGGCGCCGCACAAA
TGGACGGTGCAATCCTGGTATGTTCCGCAGCCGACGGCCCTATGCCGCAAACCCGCGAAC
ACATCCTGCTGGCCCGCCAAGTAGGCGTACCTTACATCATCGTGTTCATGAACAAATGCG
ACATGGTCGACGATGCCGAGCTGTTGGAACTGGTTGAAATGGAAATCCGCGACCTGCTGT
CCAGCTACGACTTCCCCGGCGATGACTGCCCGATTGTACAAGGTTCCGCACTGAAAGCCT
TGGAAGGCGATGCCGCTTACGAAGAAAAAATCTTCGAACTGGCTGCCGCATTGGACAGCT
ACATCCCGACTCCCGAGCGAGCCGTGGACAAACCGTTCCTGCTGCCTATCGAAGACGTGT
TCTCCATTTCCGGCCGCGGTACAGTAGTAACCGGCCGTGTAGAGCGCGGTATCATCCACG
TTGGTGACGAGATTGAAATCGTCGGTCTGAAAGAAACCCAAAAAACCACTTGTACCGGTG
TTGAAATGTTCCGCAAACTGCTGGACGAAGGTCAGGCGGGCGACAACGTAGGCGTATTGC
TGCGCGGTACCAAACGTGAAGACGTGGAACGCGGTCAGGTATTGGCTAAACCGGGTACTA
TCACTCCTCACACCAAATTCAAAGCAGAAGTATACGTACTGAGCAAAGAAGAGGGTGGTC
GTCACACTCCGTTCTTCGCCAACTACCGTCCGCAATTCTACTTCCGTACCACCGACGTAA
CCGGCGCGGTTACTTTGGAAGAAGGTGTGGAAATGGTAATGCCGGGTGAAAACGTAACCA
TCACCGTAGAACTGATTGCGCCTATCGCTATGGAAGAAGGCCTGCGCTTTGCGATTCGCG
AAGGCGGCCGTACCGTGGGTGCCGGCGTGGTTTCTTCTGTTATCGCTTAATTGAAGGATA
TTGATAAATGGCAAACCAAAAAATCCGTATCCGCCTGAAAGCTTATGATTACGCCCTGAT
TGACCGTTCTGCACAAGAAATCGTTGAAACTGCAAAACGTACCGGTGCAGTTGTAAAAGG
CCCGATTCCTTTGCCGACCAAAATCGAGCGTTTCAACATTTTGCGTTCTCCGCACGTGAA
CAAAACTTCCCGTGAGCAATTGGAAATCCGCACCCACTTGCGCCTGATGGACATCGTGGA
TTGGACCGATAAAACTACCGATGCGCTGATGAAGCTGGATTTGCCGGCCGGTGTTGATGT
AGAAATCAAAGTCCAATAATTCGGACTATAAAAAATCCCCAAGCAATCAATGCTTGGGGA
TTTTTTATGTTATGCCGAGACCTTTGCAAAATTCCCCAAAATCCCCTAAATTCCCACCAA
GACATTTAGGAGCACCTTCTTCCAGCAAACCGCCCAAGCCATGATTGCCAAACACATCGA
CCGGTTCCCACTATTGAAGTTGGACCGGGTAATTGATTGGCAGCCGATCGAACAGTACCT
GAATCGTCAAAGAACCCGTTACCTTAGAGACCACCGCGGCCGTCCCGCCTATCCCCTGTT
GTCCATGTTCAAAGCCGTCCTGCTCGGACAATGGCACAGCCTCTCCGATCCCGAACTCGA
GCACAGCCTCATCACCCGCATCGATTTCAACCTGTTTTGCCGCTTTGACGAACTGAGCAT
CCCCGATTACAGTCATCAACCATATTCCGGTTTGTCGGAGAAAGATGCATACGCTGTGAT
GACCGGATACCGACCCGTTAAAAGAGTCCGACCCTATGCCGTCTGAAAATTCAAAACGCT
TCAGACGGCATATTGAAGATATTTCTGATATTTCTGTTGATATTTCTTTGACTTGTCAGA
TATAATGCCGAGCTTGGTACATTTGTGCCAAGTTTAACTTTGTCTGAAAGACAGGCCAAT
CGTAGCCTGTCCCTTTACTTTAAAAGGAAAATAATCATGACTTTAGGTCTGGTTGGACGC
AAAGTTGGTATGACCCGCGTGTTCGACGAACAGGGTGTTTCTGTTCCGGTAACCGTTTTG
GATATGTCTGCCAACCGCGTTACACAAGTAAAATCCAAAGATACTGACGGCTATACTGCC
GTTCAAGTTACCTTTGGTCAGAAAAAAGCCAATCGTGTCAACAAAGCCGAAGCCGGGCAC
TTTGCAAAAGCAGGTGTTGAAGCCGGTCGCGGTTTGATTGAGTTTGCTTTGACTGAAGAA
AAACTGGCTGAATTGAAAGCTGGTGACGAAATCACCGTTTCTATGTTTGAAGTCGGTCAA
CTGGTCGATGTAACCGGTACCTCTAAAGGTAAAGGTTTCTCCGGCACGATTAAACGTCAT
AACTTCGGTGCCCAACGTACTTCCCACGGTAACTCCCGTTCTCACCGTGTTCCAGGCTCT
ATCGGTATGGCGCAAGACCCGGGTCGCGTGTTCCCCGGTAAACGCATGGCCGGCCAATAC
GGCAACACCAAAGCAACTGTTCAAAAATTGGAAGTTGTCCGTGTTGACGCAGAACGCCAA
CTGCTGTTGGTTAAGGGTGCTGTTCCGGGTGCGGTCAACAGCGATGTTGTAGTTCGTCCC

AGCGTGAAAGTAGGTGCGTAATGGAATTGAAAGTAATTGACGCTAAAGGACAAGTTTCAG
GCAGTCTGTCTGTTTCTGATGCTTTGTTCGCCCGCGAATACAATGAAGCGTTGGTTCATC
AGCTGGTAAATGCCTACTTGGCAAACGCCCGCTCCGGTAACCGCGCTCAAAAAACCCGTG
CCGAAGTAAAACACTCAACCAAAAAACCATGGCGTCAAAAAGGTACCGGCCGTGCCCGTT
CCGGTATGACTTCTTCTCCGCTGTGGCGTAAAGGTGGTCGCGCGTTCCCGAACAAACCCG
ACGAAAACTTCACTCAAAAAGTAAACCGCAAAATGTACCGTGCCGGTATGGCGACTATTC
TGTCCCAATTGACTCGTGACGAGCGTTTGTTTGCGATTGAGGCGTTGACTGCCGAAACTC
CTAAAACCAAAGTTTTTGCCGAACAAGTGAAAAATCTGGGTCTGGAGCAAGTGTTGTTTG
TAACCAAACAGCTCGACGAGAATGTTTACTTGGCTTCACGCAACTTGCCAAACGTGTTGG
TTTTGGAAGCTCAACAAGTTGATCCTTACAGCTTGCTGCGTTACAAAAAAGTAATCATCA
CTAAAGATGCAGTTGCACAATTAGAGGAGCAATGGGTATGAATCAACAACGTTTGACTCA
AGTGATTTTGGCACCTATCGTTTCTGAAAAAAGCAACGTATTGGCTGAAAAACGTAACCA
AATGACGTTTAAAGTTTTGGCAAATGCAACCAAACCTGAAATTAAAGCGGCTGTTGAGCT
GCTGTTCGGCGTTCAAGTTGCAGACGTTACTACTGTTACCATTAAAGGTAAAGTTAAACG
TTTTGGTCGCACTTTAGGTCGTCGCAGCGATGTTAAAAAGGCTTATGTAAGCTTGGCTGC
CGGTCAAGAGTTGGATTTGGAAGCCGCTGCTGCAGCTGCAGATAAGGAATAAACAAAATG
GCAATCGTTAAAATGAAGCCGACCTCTGCAGGCCGTCGCGGCATGGTTCGCGTGGTAACA
GAAGGTTTGTACAAAGGTGCACCTTATGCACCTCTGCTGGAAAAGAAAAATTCTACTGCC
GGTCGTAACAACAATGGTCATATTACTACCCGTCATAAAGGTGGTGGTCATAAACATCAT
TACCGCGTCGTAGATTTTAAACGTAACAAAGACGGTATCCCTGCAAAAGTAGAGCGTATC
GAATATGACCCTAACCGTACTGCATTTATCGCACTGTTGTGCTATGCAGATGGTGAGCGT
CGCTACATTATTGCTCCTCGTGGTATTCAAGCCGGTGCAGTATTGGTTTCCGGTGCTGAA
GCTGCGATCAAAGTAGGTAACACTCTGCCGATCCGCAATATTCCTGTTGGTACAACTATT
CACTGTATCGAAATGAAACCAGGTAAAGGTGCGCAAATTGCACGTTCTGCCGGTGCTTCT
GCGGTATTGCTGGCTAAAGAAGGCGCGTACGCTCAAGTCCGCCTGCGCTCTGGCGAAGTC
CGTAAAATCAACGTAGATTGCCGTGCAACCATCGGTGAAGTCGGTAACGAAGAGCAAAGC
CTGAAAAAAATCGGTAAAGCCGGTGCCAATCGTTGGCGCGGTATTCGTCCGACTGTACGT
GGTGTTGTCATGAACCCTGTCGATCACCCGCATGGTGGTGGTGAAGGCCGTACGGGCGAG
GCCCGCGAACCGGTCAGCCCATGGGGTACTCCTGCTAAAGGCTACCGCACTCGTAATAAC
AAACGCACGGATAACATGATTGTTCGTCGCCGTTACTCAAATAAAGGTTAATTTAGTATG
GCTCGTTCATTGAAAAAAGGCCCATATGTAGACCTGCATTTGCTGAAAAAAGTAGATGCT
GCTCGCGCAAGCAACGACAAACGCCCGATTAAAACCTGGTCTCGTCGTTCTACCATTCTG
CCTGATTTTATCGGTCTGACCATTGCTGTGCACAACGGCCGCACCCATGTGCCTGTGTTT
ATCAGCGACAATATGGTTGGTCATAAATTAGGCGAATTCTCATTGACCCGTACCTTTAAA
GGCCACTTGGCCGATAAAAAGGCTAAAAAGAAATAAGGTGAATCATGAGAGTAAATGCAC
AACATAAAAATGCCCGTATCTCTGCTCAAAAGGCTCGTTTGGTAGCTGATTTGATTCGTG
GTAAAGACGTTGCCCAAGCTTTGAATATTTTGGCTTTCAGTCCTAAAAAAGGTGCCGAGC
TGATTAAAAAAGTATTGGAGTCAGCTATTGCTAATGCCGAGCACAATAACGGTGCGGACA
TTGATGAACTGAAAGTGGTAACTATCTTTGTTGACAAAGGCCCAAGCTTGAAACGTTTTC
AAGCTCGCGCCAAAGGTCGCGGTAACCGCATCGAAAAACAAACTTGTCATATCAATGTGA
CAGTGGGTAACTAAGGAAAAGCTATGGGACAAAAGATTAACCCTACAGGCTTTCGCCTGG
CGGTAACTAAAGACTGGGCTTCAAAATGGTTTGCTAAAAGCACCGACTTTTCTACTGTTT
TGAAGCAGGATATCGATGTTCGCAATTATTTGCGTCAAAAATTGGCCAATGCTTCGGTTG
GTCGAGTGGTTATTGAACGCCCTGCAAAATCTGCACGCATTACCATTCACTCCGCTCGTC
CGGGTGTGGTTATCGGTAAAAAAGGTGAGGATATCGAGGTTTTGAAACGTGACTTGCAAG
TCTTGATGGGTGTACCTGTTCATGTAAATATTGAAGAGATTCGCCGTCCTGAGTTGGATG
CTCÂAATTATTGCTGACGGTATTGCCCAGCAGTTGGAAAAGCGCGTTCAATTCCGTCGTG
CTATGAAACGAGCAATGCAAAATGCAATGCGTTCTGGTGCTAAAGGCATTAAGATTATGA
CTTCAGGCCGTCTGAATGGTGCGGATATTGCCCGTAGCGAATGGTATCGTGAAGGTCGCG
TGCCACTGCATACTTTACGTGCAAATGTAGATTATGCAACCAGCGAAGCGCACACCACAT
ATGGTGTATTGGGTCTGAAAGTTTGGGTTTATACGGAAGGCAATATTAAATCTTCCAAAC
CTGAACATGAGAGTAAACAAAGAAAGGCAGGTAGACGTAATGCTGCAGCCAACTAGACTG
AAATACCGTAAGCAACAAAAGGGTCGCAATACCGGCATCGCTACTCGCGGTAATAAGGTA
AGTTTCGGTGAGTTCGGCTTGAAAGCCGTAGGTCGTGGTCGTTTGACTGCCCGTCAAATC
GAAGCTGCTCGTCGTGCAATGACCCGTCATATCAAACGTGGTGGTCGTATTTGGATTCGT
GTATTCCCTGATAAACCGATTACTGAAAAGCCTATTCAAGTTCGTATGGGTGGCGGTAAA
GGTAACGTGGAATATTACATTGCCGAAATTAAACCAGGTAAAGTGTTGTATGAAATGGAT
GGCGTTCCAGAGGAACTGGCTCGTGAAGCATTCGAGTTGGCTGCTGCCAAATTGCCTATT
CCTACAACCTTTGTAGTAAGACAGGTGGGTCAATAATGAAAGCAAATGAATTGAAAGACA
AATCCGTTGAGCAGTTGAATGCAGATTTGTTGGACTTGTTGAAAGCTCAGTTTGGCTTAC
GTATGCAAAACGCTACCGGTCAATTAGGCAAACCAAGTGAATTGAAACGTGTACGTCGCG
ATATTGCTCGTATTAAAACCGTTTTAACTGAAAAAGGTGCTAAGTAATGAGCGAAACTAA
AAATGTTCGTACTTTGCAAGGCAAAGTAGTAAGCGACAAAATGGATAAAACCGTAACAGT
ATTGGTTGAGCGTAAAGTAAAACATCCGCTGTATGGTAAGATTATTCGATTATCTACTAA
AATCCATGCCCATGATGAAAATAATCAATATGGAATTGGTGATGTGGTTGTTATATCGGA
ATCCCGTCCATTGTCAAAAACTAAATCTTGGGTTGTCAGTGAGCTGGTTGAGAAAGCACG
TTCTATTTAAGAATTAAAGCAACGTGCTTGGAATGGGAAACGAAGTATTGCAGCAAATTT
AATTTGCGTGTAAACTTCGTTTCCTGTCTTTCAGTTTCTTCTGGAAGTTTCTTCCCTTTC
GGGGTCCAAGACTGGTTTACTTGAACCGCAAGGTTTCATTTAATAAGCAGCGGCTTTGCT
GTAAGTTATCTGAAAGTGGTAAATTAAGTTGGTTAATTTAAAGGTAATAACATGATTCAA
ATGCAGACCATCTTAGATGTGGCTGATAACTCTGGTGCGCGTCGCGTAATGTGTATCAAG
GTATTGGGCGGATCTAAGCGTCGCTACGCTTCTGTTGGCGATATTATTAAAGTGGCAGTT
AAAGATGCGGCTCCGCGTGGCCGTGTCAAAAAAGGCGATGTATATAATGCGGTAGTTGTT
CGTACTGCTAAGGGTGTACGTCGTCCTGATGGTGCGTTAATTAAATTCGATAACAATGCC
GCCGTGTTACTGAATAATAAACTTGAACCTTTGGGTACTCGTATCTTTGGTCCGGTAACC

CGTGAATTGCGTACTGAGCGATTTATGAAAATCGTTTCATTGGCACCTGAAGTATTATAA
GGAATGGCACGATGAATAAAATCATTAAAGGCGATAGGGTTGTAGTAATTGCTGGTAAGG
ATAAAGGTAAGCAGGGTCAAGTAGTTCGAGTGTTGGGTGATAAAGTTGTTGTTGAGGGCG
TTAATGTTGTAAAACGCCATCAAAAACCTAATCCAATGCGTGGCATTGAGGGCGGTATTA
TTACTAAAGAAATGCCTTTGGATATTTCTAATATCGCAATCCTGAATCCGGAAACTAATA
AAGCGGACCGTGTTGGTATTAAGCTGATTGAAAATGAAGGCAAAGTTAAACGCGTTCGTT
TCTTCAAATCAAATGGCTCTATCATTGGGGCATAAGGAGATAACATGGCTCGGTTGAGAG
AGTTTTATAAAGAGACAGTTGTTCCTGAATTGGTTAAACAATTTGGTTACAAATCAGTAA
TGGAAGTCCCGCGTATTGAAAAAATTACCTTGAATATGGGTGTGGGTGAGGCTGTTGCTG
ATAAAAAAGTTATGGAACATGCTGTTTCCGATTTAGAGAAAATTGCCGGTCAAAAACCGG
TTGTTACTGTTGCCCGTAAATCTATCGCAGGTTTTAAAATCCGTGATAACTATCCGGTTG
GTTGCAAAGTAACATTGCGTCGTGATCAAATGTTTGAATTCTTGGATCGTTTGATTACTA
TTGCATTACCTCGCGTACGTGACTTCCGTGGTGTGAGCGGTAAATCATTTGATGGCCGTG
GCAATTACAATATGGGTGTTCGTGAGCAAATTATTTTTCCGGAAATTGAATACGATAAAA
TTGATGCTTTGCGTGGTTTGAATATTACTATTACTACTACAGCAAAAACCGATGAGGAAG
CGAAAGCTTTATTGTCATTGTTTAAATTTCCGTTCAAAGGATAATCATGGCTAAGAAAGC
ACTTATTAATCGTGATCTGAAACGTCAAGCTTTGGCTAAAAAATATGCGGCTAAACGCGC
GGCAATTAAAGCGGTAATCAATGATTCGAATGCAACTGAGGAAGAGCGTTTTGAGGCTCG
TTTGAGGTTTCAATCCATTCCTCGTAATGCGGCACCTGTGCGTCAACGTCGTCGTTGTGC
TTTGACAGGTCGCCCTCGTGGTACTTTCCGTAAATTTGGTTTGGGTCGTATTAAAATCCG
TGAAATCGCCATGCGTGGCGAAATTCCGGGTGTTGTTAAAGCCAGCTGGTAATAGGAGTA
ATTAAGAATGAGTATGCATGATCCTATTTCCGATATGTTGACTCGTATCCGCAATGCGCA
ACGTGCTAATAAAGCAGCGGTTGCAATGCCTTCTTCAAAATTAAAGTGTGCTATTGCAAA
GGTATTGAAAGAAGAAGGATATATTGAGGACTTCGCAGTTTCATCTGACGTAAAGTCTAT
ATTGGAAATTCAATTAAAATACTATGCAGGTCGTCCTGTAATTGAACAAATCAAGCGTGT
ATCTCGCCCCGGTTTGCGTATTTATAAAGCGTCTAGTGAGATTCCAAGTGTTATGAATGG
CTTGGGTATTGCTATTGTTAGTACTTCTAAAGGTGTAATGACTGATCGTAAAGCACGTTC
TCAAGGTGTTGGTGGTGAGTTGTTATGCATTGTAGCCTAGTGGAGGAAAAGAAATGTCAC
GTGTCGCAAAAAACCCAGTGACTGTTCCCGCTGGTGTAGAAGTAAAATTTGGAGCAGAGG
CATTAGTTATTAAGGGTAAGAACGGTGAATTGTCTTTTCCTTTGCATTCTGATGTAGCCA
TTGAATTTAATGATGGCAAATTGACTTTTGTTGCGAATAACAGCAGTAAACAAGCAAATG
CAATGTCTGGTACTGCTCGCGCATTAGTCAGCAATATGGTTAAAGGTGTTTCAGAAGGTT
TTGAGAAAAGATTGCAATTGATAGGTGTGGGTTATCGTGCTCAAGCACAAGGTAAAATCT
TGAATCTGTCTTTGGGTTTTTCTCATCCGATCGTATATGAAATGCCTGAAGGTGTCTCCG
TTCAAACTCCTAGCCAAACAGAGATTGTTTTAACCGGCTCGGATAAACAAGTTGTTGGTC
AAGTTGCTGCTGAGATTCGTGCGTTCCGTGCTCCTGAGCCTTATAAAGGTAAAGGTGTTC
GCTATGTAGGAGAAGTAGTGGTAATGAAAGAAGCCAAGAAAAAATAATTGAGGTTCACTA
ATGGATAAACATACAACCCGACTCCGTCGTGCACGCAAAACCCGTGCTCGTATTGCGGAC
TTGAAAATGGTAAGATTATGTGTGTTCCGAAGCAATAATCATATTTATGCTCAAGTAATT
AGTGCTGAAGGTGATAAAGTATTGGCTCAAGCCTCTACATTGGAAGCTGAGGTGCGCGGT
AGTCTGAAATCTGGAAGCAATGTTGAAGCAGCTGCAATAGTTGGTAAACGTATCGCTGAA
AAAGCTAAAGCAGCAGGTGTAGAAAAGGTTGCTTTTGATCGTTCAGGTTTCCAATATCAC
GGTCGTGTGAAGGCTTTGGCTGAAGCTGCTCGTGAAAATGGTTTAAGCTTCTAAATATTT
GGAGACTTTCAGATGGCAAAACATGAAATTGAAGAACGCGGTGACGGTCTGATTGAAAAG
ATGGTCGCTGTTAATCGCGTAACTAAAGTAGTTAAAGGTGGCCGTATCATGGCTTTCTCA
GCACTGACTGTTGTTGGTGATGGTGATGGTCGCATTGGTATGGGCAAAGGTAAATCAAAA
GAAGTACCAGTTGCTGTTCAAAAAGCAATGGATCAAGCTCGACGCTCTATGATTAAAGTA
CCTTTGAAAAACGGTACTATTCATCATGAGGTTATTGGCCGTCATGGTGCTACTAAAGTA
TTTATGCAGCCTGCTAAAGAGGGTAGTGGCGTAAAAGCCGGTGGACCTATGCGTTTGGTT
TTTGATGCTATGGGCATTCATAATATCTCCGCCAAAGTGCACGGATCTACTAACCCATAT
AATATCGTACGTGCAACATTAGATGGTTTGTCTAAGTTGCATACTCCTGCTGATATCGCA
GCCAAACGTGGCTTGACAGTGGAAGACATTTTGGGAGTTAACCATGGCTGAACAAAAAAA
GATTAGGGTTACATTGGTTAAAAGCCTGATTGGTACAATTGAATCTCATCGTGCATGTGC
ACGCGGTTTAGGTTTGCGTCGTCGCGAGCATACGGTAGAGGTTTTAGATACCCCTGAAAA
CCGTGGTATGATTAATAAAATCAGCTACTTGTTGAAAGTGGAGTCTTGATATGTTTTTGA
ATACAATTCAACCTGCTGTTGGTGCTACGCATGCTGGTCGTCGTGTTGGACGCGGTATTG
GTAGTGGTCTTGGCAAAACGGGTGGTCGTGGTCATAAAGGTCAAAAGAGCCGGTCTGGTG
GGTTTCATAAGGTGGGTTTCGAGGGTGGTCAAATGCCCTTGCAACGACGCCTCCCTAAAA
GAGGTTTTAAATCTTTAACAGCATCAGCTAATGCACAGCTTCGTTTAAGTGAACTGGAAT
CAATTGCTGTTAATGAGATTGATATTTTGGTCTTAAAGCAAGCGGGTCTGATTGCATCTA
CAGTCTCTAATGTTAAAGTTATTGCTTCTGGTGAAATTTCTAAGGCAGTTGCTTTGAAGG
GTATTAAAGTTACCAAAGGTGCGAGAGCTGCTATCGAGGCTGTTGGTGGTAAGATTGAAA
TGTAAGGTTTAATATTGTGGCTAATCAACAAACGTCATCAGGTTCATCCAAATTTGGAGA
TCTTAAGAAACGTCTTTTGTTTCTATTTGGAGCATTGATTGTTTTTCGAATTGGTGCCCA
TATACCCGTACCTGGAGTTGATGCTGTTGCTTTAGCTAAATTATACGAAAGCGCTGGAAA
CGGCATCCTGGGAATATTGAATATGTTTTCCGGTGGGTCGTTAGAGCGCTTTAGTATATT
TGCAATAGGAATTATGCCATATATTTCAGCTTCTATTATTGTACAGCTCGCTTCTGAAAT
TTTGCCATCATTGAAGGCTTTAAAAAAAGAAGGGGAGGCTGGTAGAAAGGTAATTACGAA
ATATACTAGGTATGGTACTGTTTTGTTAGCAATTCTTCAAAGTCTAGGTGTTGCATCTTT
CGTATTTCAGCAAGGAATTGTTGTAACAAGTTCATTTGAGTTTCATGTTTCCACGGTAGT
TTCTTTGGTAACGGGAACCATGTTTCTTATGTGGCTTGGGGAGCAAATTACTGAAAGGGG
TATCGGGAACGGTATTTCTTTAATCATTACGGCAGGTATTGCTTCAGGTATTCCTTCGGG
TATTGCAAAGCTGGTTACACTGACGAACCAAGGTTCTATGAGCATGCTTACGGCGTTGTT
TATTGTATTTGGTGCCTTATTATTAATTTATTTGGTTGTATACTTTGAAAGTGCACAGCG
GAAGATTCCTATTCATTATGCAAAACGCCAGTTTAATGGTAGGGCGGGTAGTCAAAATAC

GCATATGCCTTTCAAGTTGAATATGGCTGGTGTTATTCCCCCAATTTTTGCTTCCAGTAT
TATTCTATTTCCATCTACTCTTTTAGGTTGGTTTGGTTCGGCTGATACAAATAGTGTTTT
GCACAAAATAGCTGGATTGTTACAACACGGTCAATTGCTGTATATGGCTTTATTTGCAGC
GACAGTTATTTTCTTTTGTTATTTTTATACGGCTTTGGTTTTTAGCCCTAAAGAAATGGC
AGAGAATTTAAAAAAGAGTGGTGCTTTTGTTCCTGGGATTAGACCTGGTGAGCAGACCTC
TAGGTATTTAGAAAAAGTTGTATTACGTTTGACATTGTTTGGAGCTCTTTATATTACAAC
TATTTGTTTAATTCCAGAGTTCTTAACTACGGTTTTAAATGTACCTTTTTATTTGGGTGG
CACGTCTTTGTTGATTCTAGTTGTTGTAACGATGGATTTTAGTACACAAATAAATTCGTA
TAGGCTTACTCAACAGTATGATAAGTTAATGACTCGTTCAGAAATGAAATCATTTTCTCG
GAAATAGAATTATGGCGAAAGAAGATACTATCCAAATGCAAGGTGAAATTCTTGAAACTT
TACCTAATGCAACATTTAAAGTAAAACTTGAGAATGACCATATTGTATTGGGTCATATTT
CTGGGAAGATGCGGATGCATTACATTCGTATTTCTCCGGGAGATAAGGTCACAGTAGAGC
TGACACCTTATGATCTAACTAGGGCTCGAATCGTTTTCAGAGCAAGATAAACCAATAAAA
GGAAAATAAAATGCGTGTACAACCATCTGTTAAGAAAATTTGCCGAAATTGCAAGATTAT
TCGTCGAAATCGTGTAGTTCGTGTAATTTGTACTGATCTCCGTCACAAACAGCGTCAAGG
TTAATGGAATATTTCTTTTAATGTGATTCTGTGATATAGTGACACACTTTGCCCTAAAAA
GGAAAAAATATGGCTCGTATTGCAGGGGTAAATATCCCTAATAACGCACACATCGTAATT
GGTCTTCAGGCTATTTACGGTATTGGTGCTACTCGTGCTAAATTGATTTGTGAGGCTGCA
AATATTGCGCCTGATACTAAAGCAAAAGATTTGGACGAGACTCAATTAGATGCTTTGCGT
GACCAAGTTGCCAAGTATGAAGTAGAAGGTGATTTGCGTCGTGAGGTAACTATGAGTATC
AAGCGATTGATGGACATGGGCTGCTATCGTGGCTTCCGTCATCGTCGCGGCTTACCATGC
CGCGGTCAACGCACTCGTACAAATGCGCGTACCCGCAAAGGTCCGCGTAAAGCGATTGCT
GGTAAGAAATAAATTTTAAGGAATTTTATTAATGGCTAAAGCAAACACAGCTTCACGTGT
ACGTAAAAAAGTACGTAAAACCGTGAGTGAGGGTATTGTGCACGTTCATGCATCTTTCAA
CAATACCATCATTACAATCACTGACCGTCAAGGCAATGCGTTGTCTTGGGCTACCTCTGG
CGGCGCTGGTTTTAAAGGTTCTCGTAAAAGTACACCATTTGCAGCACAAGTTGCAGCAGA
AGCAGCTGGTAAAGTTGCCCAAGAGTATGGCGTTAAAAATTTAGAGGTTCGTATTAAAGG
TCCAGGTCCAGGTCGTGAATCCTCTGTACGTGCTTTGAATGCTCTTGGTTTCAAGATTAC
CAGCATTACTGACGTTACCCCGTTGCCTCATAACGGTTGCCGTCCGCCTAAAAAACGTCG
TATTTAATATTGGAGTGATTTGAAACATGGCACGTTATATTGGCCCTAAATGTAAGTTGG
CACGTCGCGAAGGTACGGATTTGTTTTTGAAGAGTGCGCGCCGCTCTTTGGATTCTAAAT
GTAAAATTGATTCCGCTCCTGGTCAGCATGGTGCAAAAAAACCGCGTTTGTCAGACTATG
GTTTGCAGTTGCGTGAAAAACAAAAAATCCGCCGTATTTATGGCGTATTAGAACGTCAGT
TCCGTCGTTATTTCGCAGAAGCTGATCGTCGTAAAGGTTCTACCGGCGAGTTGCTGTTGC
AGTTGCTGGAATCTCGTTTGGATAATGTCGTTTATCGTATGGGTTTCGGTTCTACCCGAG
CTGAAGCAAGACAGCTTGTTTCTCATAAGGCGATAGTTGTGAATGGACAAGTTGTCAATA
TTCCTTCTTTCCAAGTGAAAGCTGGTGATGTTGTCTCAGTTCGTGAAAAAGCCAAAAAAC
AGGTACGTATTCAAGAAGCATTGGGTTTGGCAACTCAAATCGGCTTGCCGGGTTGGGTTT
CTGTAGATGCGGATAAACTTGAGGGTGTGTTCAAAAACATGCCGGATCGCTCGGAATTGA
CCGGTGATATTAATGAACAGCTGGTGGTAGAGTTCTACTCTAAATAATGCTAGCTCAGTG
AGGGACAGTTAAATGCAGAATAGCACAACCGAATTTTTGAAACCTCGTCAAATTGATGTA
AATACTTTTTCTGCAACTCGTGCAAAAGTATCTATGCAGCCATTTGAACGTGGTTTCGGT
CATACCTTAGGTAATGCTTTGCGCCGTATCTTACTGTCATCCATGAATGGTTTTGCTCCT
ACTGAAGTAGCTATTGCCGGTGTATTACACGAATATTCTACTGTTGATGGTATTCAGGAA
GATGTTGTTGACATTTTGCTGAATATTAAAGGTATTGTGTTTAAACTCCATGGTCGTAGC
CAAGTTCAACTTGTGTTGAAGAAATCAGGTTCAGGTGTCGTATCTGCCGGTGATATTGAG
TTGCCGCATGATGTAGAAATTCTGAATCCTGGTCATGTCATTTGTCATTTGGCTGATAAC
GGTCAAATTGAGATGGAAATTAAAGTAGAGCAAGGTCGTGGTTATCAATCTGTTTCAGGT
CGTCAGGTAGTTCGTGATGAGAACCGTCAGATTGGTGCAATCCAGTTGGATGCGAGCTTT
TCGCCCATCAGCCGTGTTAGCTTTGAGGTTGAACCTGCACGTGTAGAGCAGCGGACGGAT
CTTGATAAGTTGGTTTTGGATATCGAAACCGACGGTTCTATTGATCCTGAGGAAGCTGTA
CGCAGTGCGGCACGTATTTTGATTGATCAGATGTCTATTTTTGCTGATTTGCAGGGTACG
CCTGTGGAGGAGGTTGAAGAAAAAGCACCTCCTATCGACCCTGTTCTTTTGCGTCCGGTG
GATGATCTGGAATTGACAGTACGTTCAGCTAATTGTTTGAAAGCTGAGGATATTTATTAT
ATTGGCGATTTGATTCAACGCACTGAAACCGAGCTTCTTAAAACGCCGAATTTGGGACGT
AAATCTTTGAATGAGATTAAGGAAGTATTGGCATCTAAAGGTTTGACACTGGGTTCTAAG
TTGGAAGCATGGCCACCTGTAGGCTTGGAAAAGCCTTAATGAAGAATTAAAGGATAATTG
ATATGCGTCATCGTAATGGCAATCGCAAATTAAACCGTACCAGCAGTCATCGTGCTGCAA
TGCTGCGTAATATGGCGAATTCATTATTGACTCACGAAGCTATTGTAACAACTCTGCCTA
AGGCCAAGGAATTGCGCCGTGTAGTAGAGCCGTTGATTACATTGGGTAAAAAGCCGTCAT
TGGCAAACCGCCGTTTGGCATTTGACCGTACTCGCGACCGTGATGTTGTAGTAAAACTGT
TTGGCGATTTGGGTCCTCGTTTTACTGCTCGTAACGGTGGTTATGTTCGGGTGTTGAAAT
ACGGATTCCGTAAAGGTGATAATGCACCTCTGGCACTGGTTGAATTGGTTGACAAACCGG
CTGCTGAGTAATTTTAGTCATATAACGCCATCTGCCGAAAAGCAGGTGGCGTTATTTTTG
CAATATCTGATAGGTAATAGGGTATTGGCTATCATGTTTAAAATATTAATTGAATAGCTA
AGGTTTGCGCGGTAAACTTACATCATTAAAAAATTCTATGATGGTTTATATAATGAATGC
TTTCGATATAAAGTCGACAAAGATGGACGTATTGTCTATATCTTTGCATACGTCAGACTT
GTTTGATTTGGAAGATGTGCTGGTCAAATTGGGCAAGAAGTTTCAAGAGTCTGGTGTTGT
TCCATTTGTGCTGGATGTTCAAGAGTTTGATTATCCCGAGTCTTTGGATCTTGCTGCATT
GGTTTCGTTGTTTTCAAGGCATGGTATGCAAATTTTGGGTCTGAAGCATTCTAATGAACG
TTGGGCTGCTGCGGCTATGAAGTATCATTTGCTGTTTTGTCTGTCTCATTCGGAAAATGT
TAAAGAACTGGGTCAGGTTGAGGTGCAGAAAACGGAGGATGGTCAGAAAGCAAGGAAAAC
AGTATTGATTACATCCCCTGTCCGTACCGGTCAGCAGGTTTATGCCGAAGATGGCGATTT
GATTGTTACGGGGGCGGTCAGCCAGGGGGCGGAATTGATTGCGGATGGCAATATACATAT
TTATGCGCCGATGAGGGGGCGTGCTTTGGCCGGTGCCAAGGGTGATACTTCTGCCCGCAT

ATTTATCCACTCCATGCAGGCAGAACTGGTTTCTGTGGCGGGTATTTACCGTAATTTTGA
ACAGGATTTGCCGAACCATCTGCACAAGCAGCCGGTACAGATATTGTTGCAGGATAACCG
ATTGGTTATCAGTGCAATTGGCTCAGAGTAATTGTTTGATATTTAAAAAGGAAATATTGT
GGCAAAAATTATTGTAGTAACTTCAGGTAAGGGCGGTGTCGGTAAAACGACTACCAGTGC
CAGTATTGCGACAGGTTTGGCATTACGCGGATATAAAACTGCGGTAATTGATTTTGATGT
GGGTTTGCGTAACCTCGACCTCATTATGGGTTGCGAGCGTCGTGTCGTTTATGACCTGAT
CAATGTCATTCAGGGGGAGGCGACGCTCAACCAAGCTTTGATTAAAGATAAAAATTGTGA
AAACCTGTTTATTTTGCCGGCTTCCCAGACTCGGGATAAAGACGCTTTGACACGCGAGGG
CGTAGAAAAAGTGATGCAGGAGCTGTCCGGCAAGAAAATGGGCTTTGAGTATATTATTTG
CGACTCTCCTGCCGGTATTGAGCAGGGTGCATTGATGGCGTTGTATTTTGCTGATGAAGC
CATTGTAACGACCAATCCTGAGGTTTCCAGTGTGCGTGACTCCGACAGGATTTTGGGAAT
TTTGCAAAGCAAATCCCATAAGGCAGAGCAAGGCGGTTCGGTTAAAGAACATCTGTTGAT
TACGCGTTATTCTCCCGAACGTGTGGCAAAAGGCGAAATGCTGTCTGTACAGGATATTTG
CGATATTCTGCATATTCCTTTGCTGGGTGTGATTCCTGAATCCCAAAACGTCTTGCAGGC
ATCCAATTCCGGAGAACCGGTCATCCATCAGGACAGCGTGGCGGCTTCCGAGGCATATAA
GGACGTTATTGCCCGTCTTTTGGGCGAGAACCGTGAAATGCGTTTCTTGGAAGCTGAGAA
AAAAAGCTTCTTCAAACGTCTGTTTGGAGGATAAGGTATGTCATTAATCGAATTTTTATT
CGGCAGAAAGCAGAAAACGGCAACCGTTGCCCGCGACCGCCTTCAAATCATCATTGCCCA
AGAGCGCGCCCAAGAAGGTCAGGCTCCGGATTACCTGCCGACTTTACGTAAAGAGTTGAT
GGAAGTCCTGTCCAAATATGTGAATGTTTCATTAGACAATATCCGTATTTCCCAAGAAAA
GCAGGATGGTATGGATGTGCTTGAGTTGAACATTACTTTGCCGGAACAGAAAAAGGTATA
GGACATGACCTTAACCGAATTGCGGTACATCGTCGCAGTCGCCCAAGAACGTCATTTCGG
CAGGGCGGCGCGGCGTTGTTTTGTCAGCCAGCCCACTTTGTCTATTGCCATTAAGAAATT
GGAAGAAGAGCTTGCCGTCTCTTTGTTTGACCGGAGCAGTAACGATATTATTACGACCGA
GGCGGGGGAACGTATCGTTGCACAGGCGCGTAAGGTATTGGAAGAGGCGGAGCTTATCAG
GCATTTGGCAAATGAAGAACAAAACGAGCTGGAGGGTGCGTTCAAACTCGGGCTGATTTT
TACGGTTGCGCCGTACCTGCTGCCGAAACTGATTGTTTCGTTGCGCCGTACTGCACCGAA
AATGCCTTTGATGTTGGAAGAGAATTACACGCATACTTTGACCGAGTCGCTCAAACGCGG
GGACGTTGATGCGATTATCGTTGCCGAACCGTTTCAAGAGCCGGGCATTGTTACCGAACC
CTTGTATGACGAACCGTTTTTCGTGATTGTCCCGAAAGGGCATTCATTTGAGGAACTGGA
TGCCGTTTCGCCCCGGATGCTGGGTGAGGAGCAGGTTTTGCTGCTGACGGAAGGCAACTG
TATGCGGGATCAGGTACTCTCAAGCTGTTCCGAATTGGCGGCGAAACAACGTATACAGGG
GTTGACCAATACATTGCAGGGCAGCTCGATTAATACAATCCGCCATATGGTTGCCAGCGG
TTTGGCAATCAGCGTGTTGCCGGCAACCGCACTGACCGAAAACGATCATATGCTGTTCAG
CATTATTCCGTTTGAGGGTACGCCGCCAAGCCGGCGGGTCGTATTGGCGTACCGCCGCAA
TTTTGTCCGTCCCAAGGCGTTGTCGGCGATGAAGGCGGCGATTATGCAGTCGCAGCTTCA
CGGGGTAAGTTTTATCTGCGACTAGGCGCAGGCATTGTTTTCAAAACGCCATTTCCCTGA
GCCGACAACACGGTATGCCAAGATATTGCCGTCATCATCGATTTTGAGTATAGCATCGCC
ACGGAAACTGCCGTCCTGAAGATATTCGACTTTTGCATCACTGTGAATGTTTTCATCAGT
GCCGATGCAATGCCATGTATAGTGGATTAACAAAAACCAGTACGGCGTTGCCTCGCCTTG
CCGTACTATTTGTACTGTCTGCGGCTTCGTCGCCTTGTCCTGATTTTTGTTAATCCACTA
TAAAAGAGGCCGTCTGAAAAACATTTTTCAGACGGCCTTGTTTATTCAATCAAATCAGTC
TTTCAACTTCGCCAACTGATTTTGAACTTTTGCCATTTTGTCTTCCAATTCCGCCAAATC
GGCTTTGTCTTTTTCCACCAGATGCGCAGGGGCTTTTTCGGTGTAGCCGGGTTTGGAGAG
TTTGGCGTTGAGTTTGTCCAAGGCTTTTTGCAGCTTCTCGGCTTCTTTGCTCAAACGGGC
GGTTTCGGCGGCTTTGTCGATTTCGACTTTCAACATCAGGCGCGCGCCGTTGCAGACGGC
GACGGGCGCGTCTTCGCTTTCGGGTAGGGCGGCGACTTGCTGTGCTTCGGTCAGGCGGGT
CATCATCGGCAGGTATTTGAGGTAGTCCGCCAAGTCGTCCGTGCTTTCGACAAACAGCGG
GGCTTTTACGTTGGGCTGGATGCCCATTTCGCCGCGCAGGTTGCGGACTGCGCCAATCAA
ATCCTGCAACACGGTCATTTGCTCGAATGCCGTCTGAACAATCTCGCCGCTGTCGGCTTC
GGGGAAGCGGGCGAGCATGATGCTGTCGGCGGTTTTCGCGTCGCACATAGGAGCGACGGT
TTGCCACAGTTCTTCGGTGATGAACGGGATAATCGGGTGCAGCAGGCGCAGGGCGGCTTC
GAGTACGCGCAATAAGGTATGGCGTGTGGCGCGTTGGCGGCTGGCGCAGCCGGTTTGAAG
CTGCACTTTGGCGAGTTCCAAATACCAGTCGCAATAGTCGTTCCATACGAAGCTGTACAG
GGTTTCCGCCGCCAAATCAAAGCGGTAGGTTTCGTAGGCTTGCGTAACCTGTTCGATGGT
CTGATTCAGACGGCCTACAATCCACATATCGGGGAAGGAGTAGCCGCGCGGTTCGGCAGC
GGTTGCGCCGTAACCGCAGTCTTGGTTTTCGGTGTTCATCAAGACGAAGTTGGTGGCGTT
CCAGATTTTGTTGCAGAAGTTGCGGTAGCCTTCGGCGCGTTTGAAGTCGAAGTTGACCGA
ACGCCCCAAGCTGGCGTAGCTCGCCATAGTGAAGCGCAAAGCGTCCGCGCCCATACTCGG
AATGCCTTCGGGGAAGAGTTTTTTCGTGGCTTCTTCCACTTTCGGCGCGGTTTCGGGTTT
GCGCAGGCCGGTGGTGCGTTTTACCAGCAGTTTTTCCAAGCCGATGCCGTCGATCAAATC
CACAGGGTCAATGACGTTGCCTTCGGATTTGGACATTTTTTTGCCTTCGTGGTCGCGCAC
GATGCCGTGGATGTACACGTCTTTAAACGGTACTTTGCCGGTGAAGTGGGTGGTCATCAT
AATCATACGCGCCACCCAGAAGAAGATGATTTCGTAGCCGGTTACTAAGACATTGGACGG
CAGGAAGGCTTTGAGTTCGTCGGTTTCAGACGGCCAGCCGAGTGTGGAGAACGGCACAAG
CGCGGAGGAGAACCATGTATCCAATACGTCTTCTTCGCGAGTCAAGCCTGTTTTGCCGGC
TTGTTTTTCGGCTTCTTCCTGATTGCGGGCAACATACACATTGCCTTCGTTGTCGTACCA
TGCAGGGATTTGATGGCCCCACCACAGTTGGCGTGAGATACACCAGTCTTGGATGTTGTT
CATCCATTGGTTGTAAGTGTTGACCCAGTTTTCAGGGATAAAGCGTACCGCGCCGCTATC
AACGGCTTTTTTGGCTTTATCGGCGAGGCTCAAGCCTTTGAACTCGCTGTCCGGCTCGCC
GCCGTTTGGGGTGGCGGACATGGCGACAAACCATTGGCTGGTCAGCATAGGTTCAATCAC
CGAACCTGTACGGTCGCCTTTCGGCGTCATCAGCGTGTGTGGTTTGATTTCGACCAAGAA
ACCTTGTTCCTGCAAATCGGCAACCATTTGTTTGCGCGCGGCAAAGCGGTCTAAGCCTGC
GTATTTTTCAGGCAGGGCAAAGCCTAGTTGCGCTTCGCCTTTGAAGTTGAACACTTCGGC
GTTTGCCAGCACTTTGGCTTCCAAGTTGAACACATTAATCAGGCGCGTGTCGTGGCGTTT

GCCGACTTCGTAGTCGTTGAAGTCGTGTGCAGGCGTGATTTTCACGCAGCCTGTGCCGAA
GTCTTTTTCAACGTATTCGTCGGCAATCACGGGGATAGTACGGCCGGTCAGCGGCAGGAT
TAATTCCTTGCCGATTAAGTGGGTATAACGTTCGTCTTCAGGATTGACGGCAACGGCAAC
GTCGCCCAGCAGCGTTTCAGGACGGGTGGTCGCCACGATAACGGCTTCGGCGGGATTGTC
CGCCAGCGGATAGCGGATGTGCCACATAGAGCCTTGTTCTTCCACGCTTTCCACTTCCAA
ATCCGATACCGCCGTGCCAAGCACGGGATCCCAGTTCACCAAGCGTTTGCCGCGGTAAAT
CAAGCCTTGCTCATACAGGCGCACGAACACTTCGGTTACGGTTTCGGCGCGCACGTCGTC
CATCGTGAAATACTCGCGCGTCCAGTCGGCAGAGCAGCCCACGCGGCGCATTTGTTGGGT
AATCGTGCCGCCGGAAACTTCTTTCCATTCCCACACTTTCTCCAAAAATTTTTCGCGACC
CAAGTCATGGCGGGACACGTTTTGCGCAGCAAGCTGACGCTCAACCACAATCTGCGTGGC
GATGCCCGCGTGGTCTGTGCCGGGAATCCAGGCGGTGTTGCAGCCTTTCATGCGGTAGTA
GCGGGTCAGACCGTCCATAATGGTTTGGTTGAAGGCATGACCCATGTGCAGCGTGCCGGT
TACGTTGGGCGGCGGCAGTTGGATGGAGAAAGACGGTTTCGTCAAATCCATATCAGGTTG
GAAATAGCCCTGCTCTTCCCAGTTTTGATAATGTTTGGATTCGATTTCGGCTGGATTGTA
TTTGTCTAACATGATGGAACTTTGTGAAATTAAGGTTATTTTTGATGTGCGGATTATAAC
GCAAAAAGGCCGTCTGAATCATTTCAGACGGCCTTTGGCATACAGGTTTTAAAAATGGAA
CAATACCAGGCTGACGGCAATCACCGCCATACCCGTTGTCAGGCCGTAAACGGTTTCATG
GCCGTCTGAATAGCGTTTGGCAGCCGGCAGCAGCTCGTCCAACGCCAAAAACACCATCAC
ACCGGCTATCACGCCGAATACCGAACCAAACACGGCAGGCGACAAAAACGGCTGCAAAAC
CAAATAGCCCAAAGCCGCCCCCAACGGCTCGGCCAAGCCGGATAGCAGACACGCCCACAC
CGTTTTCTTACGGCTGCGGGTGGCAAAATAAACCGGCGCGGCGATGGAAATGCCCTCCGG
AATATTATGGATGGCAATCGCCAAGGCCAAAGGCATCCCGACTGCTGGATTTTCCAATGT
GGCAAAAAACGTCGCCAAGCCTTCGGGGAAATTGTGCGCAGTAATCGCAAACGCCGCCAT
CATGCCGACTCGCGCGATATGGCGGCGTTTGCTTTCTTGAAACGACGGGTCTTGCGCGTC
TAAAGTTTCATGCGGGTTCGGCACCAGACGGTCAATCAGCGCAATGCCGCCCATCCCGGC
CAAAAATGCCATGGTCGCCGCCGCAAACGCGTGGTCTTTATCATAAATTTCAGCGAACGC
CTCGCTGGACTTACTGAAAATCTCCGTCAGGGAAACATATACCATCGCACCGCCGGCAAA
CGCCAAACCAAACGACAACACACGCGGATTGGGCGTTTTGGAAAACATCACCAAGCCACT
GCCTAATACGGTAAACAAACCGGCAGCCAATGTGATGGAAAAGGCAACGGCCAAATTGGA
CATCGAAAAATCGGGCATGAGAAAACCTGCGCTAAAAGCTGGGACAGGTTCAGACTAACA
CTTTTTAATGTATATGATAATAGTTATTATTTATTTTATTGATTGGATACACGGATTTTG
AAACAAAAGGCCGTCTGAAAAATGATTTTCAGACGGCCTTTAAATTTGAAATGCCGCTAA
ACCTTAGTGCTTTCCAGCTTAAGCCTGATAACGCGACAGGCTCAAATCGTCGCTGCGGAT
TTCGGTGTCTTTGCCGCTCACGATATCGGCGGTTAATTTTGCCGAACCCAGCGACATGGT
CCAGCCTAAAGTACCGTGGCCGGTATTCAGAAACAGGTTGTCAAAGCGGGTGCGACCGAT
TAACGGCGTGCTGTCGGGCGTCATCGGTCTGAGGCCGCTCCAGAACGATGCTTGGCTCAA
ATCGCCGCCTTCCGGGAACAAGTCGTTGACGACCAAAGCCAAGGTTTCGCGGCGTTTTTC
GGGCAGTTTGATTTCGTAGCCCGACAATTCCGCCATACCGCCGACGCGGATTCTGTTGTC
AAAGCGCGTGATGGCGACTTTGTAGCTTTCATCTAAAACGGTGGACACCGGTGCGCCGTC
TGAATTGGTGACCGGCAGGGTCAAGGAATAGCCTTTGACGGGATAAATGGGCAGATTGAG
ATCCAACTGCGCCAAAACCGTCCTGCTGAAGCAACCGAGCGCGCAGACAACGGCATCTGC
TTCAAACCGCCCTGTTTCGGTTTCAACGGTTTTGATGCGCAGCCCGTTGTGGTCGATGCG
GCTGATGTTTTGGTTGAAATGAAACCGTACGCCCTTTTCCTGACACAATTTGTATAGGTT
TTCAGTGAAGAGGCGGCAGTCGCCGGTCGCATCTGCAGGCAGGTGCAGGCCGCCGGCAAT
TTTGGCGGTAACGCGTGCCAGCGCAGGCTCAAATTCTGCACATTCTTCGGGTTTCAGACG
GCGGTACGGCACGCCGTAGCGTTCCAAAACGGCAATGTCTTGTTTTGCCGCTTCGACTTC
TTTGGTTTGGCGGAAAATCTGCAACGTCCCTTTTTTGCGTCCCTCAAAATTCATGCCGGT
TTGCGCTTCAAAACGGCGGAACATTTCACGGCTGTATTCGGAAATCCTGACCATGCGCTC
TTTATTGGTTTGATAGTGCGCTGCCGTGCAGTTTTGCAGCATTTGCCACAGCCATTCGAT
TTGATACAGGCTGCCGTCGGGGCGAAACAGCAAAGGCGGATGGCTTTTAAACAGCCATTT
CAGCGCTTTGGTCGGGATACCGGGTGCAGCCCAAGGCGTGGTATAGCCGTAAGAAAGCTG
GCCTGCGTTGGCAAAACTGGTTTCCATCGCCACACCCTCGGCGCGGTCGATGACCGTTAC
TTCATGTCCGGCCTCTGCCAGATACCACGCGGAAGACACGCCGGCAACACCCGCACCTAA
AACAAGCACTTTCATGTTTCTCCCTCCGGCTTTTTCAAAACAGACTTAATATGCCGTGCC
GTCTGAATATTCGGATTCAGACGGCCTCGGATATTAATGCGGCAATTCGCCGTTTGTGAT
TTTTTGTTTGAAGTCGCGCGTTTCATTGACGATGACTTTCGCCATCAATAAAAGTGCAAT
CAGGTTGGGCAATGCCATCAAGCCGTTGAATGTGTCCGAAGCCAGCCACACCAAATCAAG
GCTCAACACGGTACCCAGCATAACGGAAGAAACATAACCCACGCGGTACAAACCGGCAAA
TTTCTCGCCGAAAACATACACCGCGCATTTTTCGCCGTAATAGCACCAGCCCAAAATGGT
TGAGTAGGCAAAGAAAATCAGGCCGATGGTAACAATCCAGCCGCCGATGCCGGGCAGCAT
TTTTTGGAATGTGACGGTTGTCAGTGCCGCGCCGCTCACTTCAGGTTTGACAAACTCGCC
GCCCGCGCCGAGCAGTCCCATTACCAACACGATGCCGGTAATCGAGCAAACGACGATGGT
ATCCAAAAACGTACCGGTCATAGAAACCAAGGCCTGACGGACGGGATGGTCGGTTTTCGC
GGCTGCGGCGGCAATAGGCGCAGAACCCATACCCGCCTCATTGGAGAACACGCCGCGCGC
CACGCCGTAGCGGATGACCGTACCGATAGCACCGCCCGCCACTGCCTGCGCGCTGAACGC
ATCGGAGAAAATCAGCTTGACGGCAGGCATCAGTGCATCGGAATTAATCGCGATAATGGA
AAGACCGCCCAACACATAAAACACCGCCATAGCAGGCACGATGAAAGAAGCGGCTTTGGC
GATGCCTTTAATACCACCTAAAACGACAACGGCAGTCAGAACGGTCAACGTAATGCCGGT
ATAGGCAGGTTCGATACCGAAGCTGGTTTGCACCGCCTGTGCAACCGAGTTGGACTGCAC
CGAGCTGCCGATACCGAAGGAAGCGAATGTGCCGAACAGCGCAAACGCGACGGCCATCCA
TTTCCAGTTTTTGCCCAAGCCTTTTTCGATGTAATACATCGGGCCGCCGGACATTTCGCC
TTTGGAATTGTTGACGCGGTATTTCACCGCCAACACGCCTTCGCCGTATTTGGTGGCCAT
GCCGAAAATGGCGGTCATCCACATCCAAAATACCGCGCCCGGGCCGCCGGTTACCACCGC
AGTCGCCACGCCGGCGATGTTACCCGTGCCGATGGTGGCGGACAGCGCGGTCATCAACGC
CGCAAAATGGGAAATATCGCCTTCGTGGCCTTCGCCGCTTTTATGCTTCTTTGGCGGCAT

AAACGCCTGTTTCAGCGCATAACCCAACATCGTGAACTGCAAACCTTTTAATAAAACAGT
CAGCAAAATACCCGTGCCGACCAGCAGCATCAGCATCAAAGGTCCCCAAACCCAGCCGCT
GACGGTTTCAAAAAAGGCTTTGGGATTGTCTAAAAACACTTGCATGGCTTTCTCCTTTGT
CTGTTTTATTTTTAAAACACCACTTTTGTAGTGTCCAGTAATTTCAGCACAGAATATCCA
ATAAGACAATATGTTCTTTTGAAAAATACTTTTGGTTTTTTCGCCGAAAACAGGACGGTT
CAAGTTGCGGAAATTGTTTGCAATTCTTTAAAAGCAGCGGCGGAGGTCACAATGAAATGT
CCGAATGGGGATGTGGCGGGCGGCAGAAATCATCAATGCTGCCGACTGCCATACTTCTGA
AATCTACAAAATGATGCATCGATCAAACAATATACCGCTTTAAAAAAACCGATGCCGTCT
GAAACGCTTTCGGGGTTTCAGACGGCATCAAAAGGGTACGGTCAGCGGATGATGCCGCGC
GCCGATTGTGCGAAAAAGTCTCGGAATACGGCAAGCTCGGCTTGGGTTTCGGCGCGGCGG
AGAATGTCTGCCTTGGCTTCTTCAAACGGAATGCCGCGATGGTAGAGGGTTTTGTACACG
TCTTTGACGGCGGAAATCTGCTCTGCGGTAAAACCGTTGCGGCGCATGCCTTCGCTGTTG
AGCCCCGCCGGTTCGGCGCGGTAGCCCGATGCCATAAAGTAGGGCGGCACGTCTTTGTGT
ACGCCTGCGGCAAACGCGGTCATGGCGTAGTCGCCGATGCGGCAGAATTGGAAAACCAGC
GTGTAGCCGCCCAAAACGACGTAGTCGCCGATGGTAACGTGTCCGGCAAGCGAGGCGTTG
TTGGCGAAAATGGTGTGGTTGCCGATGACGCAGTCGTGCGCGAGGTGGCAGTACGCCATA
ATCCAGTTGTCGTCGCCGATACGGGTTTCGCCGATGCCGGTTACCGTACCTAAATTAAAG
GTGGTGAATTCGCGGATGGTGTTGCCGTTGCCGATAATCAGCTTGGTCGGCTCGTCGCGG
TATTTTTTGTCCTGCGGGATTTCGCCGAGGCTGGCAAATTGGAAAATGCGGTTGTTTTCG
CCGATGCTGGTGTGGCCGTTGATGACGGCGTGCGGACCGATTTCGGTATTCGCGCCGATT
TGGACGTTGGGGCCGATAACGGTGTACGCGCCGACTTTGACGCCGGAGTCGAGTTCGGCT
TTGGGGTCGATGACGGCGGTCGGGTGGATGAGGGTCATGTTTTTCCTTTCCTGTCGTGTT
GCCGCGAAGATGCGCGACGGCAACAGGTTGTCTGAAAACTTTCAGACGACCTTTTTCTGA
ACACTCAAACCACGCGTTTGGCACACATGATGATGGCTTCGACGGCAACTTGCCCGTCCA
CTTTGGCAACGGCGTTGAATTTGCCGATGCCGCGCCGGCTGGTCAGCAGCTCGACTTCAA
AGACGAGTTGGTCGCCGGGGATGACTTGGCGTTTGAAACGGGCTTCGTCTATGCCGGCGA
AGAAGAAGAATTCGTTTTCTTTGCGCCCGCCTTCGCTCAAAATCGCCAACGTGCCGCACG
CCTGCGCCATCGCTTCGATGATGAGTACGCCGGGCATCACGGGCAGGTCGGGGAAATGGC
CTTGGAACTGGGGTTCGTTTATGGTGACGTTTTTAATCGCGGTCAGGGTTTTCATCGGCT
CGAAGGCGGTGATGCGGTCGAGCTGGAGAAACGGATAGCGGTGGGGGATGAGTTTTTGGA
TGTCTTTGGCTTCGATGGGGAGTTGTACGTCCATGTCTGTCGTATTCCTTGAATAAAGTC
GGTTTGGTTATTTGCTGTCTTGACCGGCATCTGAAAGCTGCTGCTCCAGTGTTTTGAGCC
GTTTGTTCATTTCGCTTAAGCGGTGGATGTAAACAGCGTTGCGCGCCCATTCTTTATGGG
TGGACATCGGGAAGATGCCGGCGAGGTGTTTGCCGCTTTCGGTAATGCTGTGGGTGACGG
ACGTGCCGCCGCCGATGGTGGTTTTGTCGGCGATTTCGATGTGTCCGACCGTACCGACGC
CGCCGCCGATGATGCAGTAGCTGCCTATGGTTACGCTACCTGAGATGCCGGTTTTGGCGG
CGATGACGGTGTGCGAACCGATTTTGCAGTTGTGTCCGATTTGGACTTGGTTGTCGATTT
TGGTGCCGTTGCCGACGGTGGTGTCGCTCATCGCGCCGCGGTCGATGTTGGTGTTCGAGC
CGATTTCTACGTCGTCGCCCAGCGTTACCGCGCCGGTTTGCGGGATTTTGAACCACGAAT
CGTCGGCGAAGGCGAGTCCGAAACCGTCCGCGCCGATGACCGCGCCGCTGTGGATTTCGA
CGCGTCTGCCCAGTGTGCAGCCGTAATAAACGACGGCGTTGGGATGCAGGACGACTTCGT
CGCCCAGTTTGCAATCGTGTTGGACGACGGCGTTTGCCAAGATGCGGCAGCCTTCGCCGA
GCACGGTGTTTGCGCCGATGTAGACGTTCGCGCCGATTTCGCAGCTGGTGGGAACGGTCG
CGCCCGGTTCGACGACGGCGGTCGGATGGATGCCGCCGCGCGCTTTGACGACGGGTGAAA
ACAGGCGGGCGACTTTGGCGAAATAGAGATAGGGGTCGTCGGCGACAATCAGGTTGCGCC
CTTCAAATCCGTCTGCCGCTTTGGCGGAAACGATGACCGCGCCCGCGCTGCTGTCGTGGA
CTTCGGCTTTGTATTTCGGATTGGCAAGGAAGCTGATGTGTTCCGCCTGCGCGTCTGCGA
GCGGGCGCACGGCGGTAACGGAAATGTCCTCGCCGCGCCATTCGCCGCCGAGCCGCGCGG
TGATTTGGGACAGGGTGTAGGTGGCCGGAATCATGGTTTTCCTGTTCGGTATGCCGTCTG
AAAGGGTCAGCGGGCGTTCATTTCTTTAATGACGCTGTCGGTAACGTCGTATTGGGTGTT
GACGTAAATCACGTTCTGCAAAATGACATCGTAACCTTCCTGTTTGGCGATTTTGACGAT
GACGCGGTTGGCGTTTTGCTGGAGGGAGGCAAACTCTTCGTTGCGGCGGAGGTTGTAGTC
TTCTTCAAACTGCGCCTGTTTTTTGCGGAACGCTGCGACCAGCCCGCGCCATTTTTCTTC
GGCTTGCGCCTTTTTTGCGTTTCTGAGTTTGCCTTCGGCAAGCTGCCTTTCCAAATCCAG
ACCTTCGCGTTGCAGTTTTTGCAATTCGTCCTGACGAGCGGAAAATTCGCTGTCCAGCGT
TTTTTGAATCTTGCGCGCCTGCTTGGATTCGAGGTAGATGCGCTCGGTGTTGATAAAGCC
GATTTTTTGGAAGGTGTCGGCGTGCGCGCCTGCGGTGCAGCACAAACCGATCAGAGCCGC
GGCAAACGCGCGGGTCAAACGGGTCATGGTAAAACTCCTTCGAATGTTGCCGCGAAATGC
CGTCTGAAGGGCTTCAGACGGCATTTGCGGGATTAGAACGTCGTGCCGAGTTGGAATTGG
AAGCGTTGGATTTCGTCTTCCGGTTTTTTCTTCAGCGGGTAGGCGTAGCTGAATTTCATC
GGGCCTAAAGGCGAGAGCCAGGTAACCGCGCCGCCGGCGGAATAGCGCAATTCGTTGGTA
AAGGTGGATTTATGGGTATTGCCGGCGCCGTAAATGTTTTGAACCCTGCCGCCGGTCGCG
GAACTGCTGTTGTCGTCGTAGGTTTTGCCGTCCCACACGCTGCCTGCGTCGGCAAACAGG
CTCAGGCGGACGGTGCGCGCGTCTTTCGCGCCGGGCATCGGGAAGAGCAGCTCGGCGGAG
ACGTTGGCTTTTTTGTTGCCGCCGTAGCTGATTTTTTCGCCGTATTCGTCATAGACTTTC
GGACCGAGCGTGCCGCTTTCGTATCCGCGCACCGAACCCAGGCCGCCGCCGTAGAAGTTT
TCAAAGAAGGGGATTTCTTTGGTTCTGCCGTAGCCGCCCGCAATGCCGACTTCGCCGCCG
AGCATCAGCGTGAAGGTTTTGCTCAGGGGGAAGAACCAGGTTTGGTTGTGGGTGGCGGAG
TAGTATTGCAGTTTGCTGCCAGGCAGGGCGATTTCGGCGTTCACGCCCGTCAGGTAGCCG
CGCGTCGGCCATAACGCGCTGTCGGTTTTGTTGCGCCCCCAGCCGACGGTACCTTTGTAC
AGCCAGCCTTTGAAGCTGCCGTCTGTGCCGTCGGTTTTGCCGTATTTCTTGATAAAGTCG
GCATAGTGTTTGGGCGCTTTGTTGTAGGTGTTGACGGTCAGGTGTTCTGCCACCAAACCG
AAATTCACGCGGTCGTATTCGGTAACAGGCACGCTCATGCGGATGCCTGCGCCTGCCGTG
GTGGTTTTATATTGTTTGATGCTGGTCGATGCTTTGCGCGGGTCGAAGGCTTTTCCGTAA
ACATCGTAGCCCAGGCTGACCCCGTCTGCCGTGAAGTACGGGTCAGTAAACGACAGCGAG

CCGTTAAGCGTGGTTTTGCTCCTGGAGGCGCGCAGTGCGGCCGACTTGCCCGTACCGAAC
AGGTTGTCTTGGGAAACGCCTGCGGACATGACCAACCCGGTATCTTGAACCCAACCCGCG
CTCAAATCCAGGGAACCGGTGGAACGTTCGGTCAGACTCATGTTCAAATCGACTTTGTCG
GGCGTGCCGGCAAGCGGGACAGCATCAAACTGGACATTGTCGAAGTAGCCCAAAAGCTCG
ACGCGCTCTTTGGAACGTTGCAGCTTGGAGGTGTCGTAAGGTGCGGATTCCATTTGGCGT
AATTCACGGCGGACGACTTCGTCGCGGGTTTTGTTGTTGCCGGTGATGTGTATTTCGTTG
ACGTAGATTTTCCGGCCCGGTTCGATGTGCAGGACGAAATCGACGGTTTTGGTTTCAGCG
TTCGGCAGCGGCTGTACGCTGATTTCGCTGTATGCGTAGCCTGCCGAGCCCATGCGGTTC
TGAATCTCACCCAAAACGGCGGTCATCTGCTGGCGTTCGTACCATTTGCCGGGCTTCATG
GTCAGCAGTTTTTCCAGTTCGGCTTTGGGGACTTCGTTGGTGTCGCCTTCGATGGAGACT
TTGCCCCAACGGAAACGTCCGCCTTCGTGGACGGTGATTTTGATGGTCTGCTTGGTTTTG
TCTTCGTTGGTTTGGATGTCGGTATCGAGGATACGGAAATCGAAGTAGCCGTTATTTTGG
TAGAAGTCGGTTACTTTTTCCATATCTTGGGCAAATTTCTGCTCGTTGAATTGGTTGCTT
CGTGTCAGCCATGTCCAAATGCCGCCTTCGGTCAGGGACATTTGCCGCATCAGTTTGCGG
TCGGAATAGACTTGGTTGCCTTCAAATTCGATGTCGGTGATTTTGGCGGATTTGCCCTCG
TCAATCGTGATGTCGATGTCGACGCGGTTGCGGGCGAGTTTGGTTACTTTGGGCGTGATT
TGGATATTGAGTTTGCCGCGCCCGAGGTATTCTTCTTTCAGGCCGGCGACTGCCTGATTG
AGTGTCGCCTGATTAAAGTATTGCGACTGCGCCAGCCCGAACGATTCGAGGTTTTTCTTA
ATGGCGTCGTTTTGCAGCATTTTTGCGCCGGTGATGTTGAGCGAGCCGATGGTGGGGCGT
TCGATAACGGTCAGCAGGAGCTGCCCGTCCGCAGTTTCGACGCGTACGTCGTCAAAGAAA
CCGGTGGCGTACAGGCTTTTGATGATGGCACTGCCGTGTGTGTCGTTGTAGGTGTCGCCG
ACTTTGACGGGCAGGTAGTTGAATACGGTACTCGGCTCGGTACGCTGCAAGCCTTCGACG
CGGATGTCTTGGATGGTGAAGTCGGCAAGTGCCAAAGGCGATATGCCCAACATCATCAGT
GCGGAAGCAATCTGTTTCAGTTTCATTGTCAGTTCCTTGTGGTGCGGAATGCGGTTTCAG
ACGGCATTCCGAAACGTAAAATCTAACCGAGCAGCCGGGTAACGTCGTTGAAGAAGGCGA
CCGCCATCATCAGCATCATGAGGGCGAGCCCGAAGCGCAAACCGATGTTTTGGACGCGTT
CGCCCAAAGGTTTGCCGCGTATCCATTCGGCAGTATAAAACACGAGGTGCCCGCCGTCCA
AAACAGGGACGGGCAGTAGGTTCAGCACGCCGAGGCTGATGCTGACCAGTGCTAAAAATT
CCAAATAACTTTGCAAGCCGAGTTCGGCGGACTGTCCGGCAATGTCGGCAATGGTCAGCG
GCCCGGAAATATGGCTGACGGAGGCGTTGCCGCTGATTAGTTTGCCGAAAAATTTGAGGG
TTGTCCACGAGTGGGAAACGGTTTTTTCCCAGCCCATGCCGAATGCGCGGACAACAGACG
GACGGTAGCTGCGGCGGATTTGCGCGTCCCACGCCCTGTCCGGCTGCGGACGGAGGCCGA
CGCGCCCGATCAGGGTGTGGTCGGACTGTTCGACAGTATCGGGGCGGATGTCGGCGGTAT
GGGTTTGTCCGGCGCGTTCGTAGTTCAGGGTGATTTTTTTGCCGGGGCTTTGGCGGGTCA
GGTTTGCCCATTCTTGCCATGAGGCGATGGGTTTGCCGTCGGCGGCAGTCAGCCTGTCGC
CCGGTTTCAGGCCTGCTTTTTCGGCGGGGCTGCCTTTTTCCACGCCGCCGGCAACGGTTG
TGATTTTAAAGGGCATCAGTCCGATGTAGCCTTGGTTTTTTGCGATTTTACCGGCTTCCG
GCGTGCCTGCGGCATCGATGGTGCGGACGGTTTGCGCGCCCGATGCCGTCTGAACGCCGA
CGGCGACTTTGCCGGCTTCGAGGTTGAGGACGATTTCGGTTTGCGCGCTGCCCCAATCTG
CAACGGGTGTGCCGTTGACGGATTGTATTTTGTCGCCGCTTTGGAAGCCGGCGCGGGCGG
CAATGGTGTCGGGTTCGACTGTGCCGACGTAGGGGCGCAGTTCGGTTACGCCGAAGGAAA
AGCTCAGTCCGTACAGCAAAACCGCCAGTGCGAGGTTGGTCAGTGGCCGGCGGCGACGA
TGGCGATGCGCTTGGCGGGGTGTTGTTTGTCAAAAGCGTAGGGTAAATCGGCTTCTGATA
CTTCGCCTTCGCGCGTATCGACCATTTTGACGTAACCGCCCAACGGAATCGGGGCGAGGC
ACCATTCGGTGTCGCCGCGCTTTCGGGTGAAAAACGGTTTGCCGAAGCCGACGGAAAAGC
GTACGACTTTGACGCCGCACAATCTGGCAACGATGTAGTGTCCGAACTCGTGCAGGCTGA
CCAAAATCAGGATGGCGAAGATAAAAGCTAGAAGGGTGTGCAAATGGTTTTCCTTTGATA
ACGGTGTTCAGATGGCATCAGCGCAGTGTGCCGATAAATGCTCGCGCTTGTGCGCGTGTC
CGGGCATCTTGCGCCAAGAGCCCCCCTATATCGCCTATGCCGTCTGAAAAGTCTTGTGCA
AGACAGTGGGCGACGGTTTTGGCAATGTCGGTAAACTTAATCTGTCCGTCCAAAAAGGCG
GCGACGGCGGCTTCGTTGGCGGCGTTCAATACGCAGGGCGCGGCTCCGCCTGCGTTCATG
GCTTCATAGGCGAGCCTCAGGCAGGGGAAGCGGTCAAAGTCGGGCTTTTGGAAGGTCAGC
GCGGACAATGCGTCGAAATCCAGGTCGCCGACACCCGAATCGATGCGCTCGGGCAAACCC
AAACAATAAGCGATGGGCGTTCGCATATCGGGATTGCCCAGTTGCGCCAGCACGGAGCCG
TCGCGGTAGCGCACCATGCTGTGTATCACGGATTGCGGATGGATGACGACTTCGAGTTTG
TCGGGCGGACAGTTGAACAGCCAATGCGCTTCAATCAGCTCCAAACCTTTGTTCATCATG
GTGGCGGAATCGACGGAGATTTTGCGTCCCATACGCCAATTGGGGTGTTTGACCGCTTGG
GCGGGCGTAATGCGGTCGAACGTGTTTAAATCGGCGGTCAGAAACGGGCCGCCGGAAGCG
GTCAGGATAATCGAAGCGATGCCGTGTTCGTTCAGACGGCCGGCGTAATCGCGCGGCAAA
ACTTGGAAAACGGCGTTGTGTTCGCTGTCGACGGGCAGCACTGCCGCGCCGTTTGCACGG
GCGGTTTCCATAAACAACGCGCCGGAAACCACCAGCGTTTCTTTGTTTGCCAGATAAATG
GTTTTGCCTTTTTGCGCCGCTGCGAGCGCGGAAGGCAGCCCCACCGCCCCGACGATGGCG
CACATGACACCGCTGACTTCGTCGGCAGAGGCAACGTCAACCAATGCCTGCGCGCCGTGT
AAAACCTGAGTCGCCGTGCCGTCGCGTTTCAACAGGGCTTCAAGCCGGGCGGCGTGTTCC
GCATCGGCAACGACGGCATATTCGGGGTGGAACGTTTGACATTGAGCCGCCAATTTCTCG
ACCTGCTTATGCCCTGCCAGCGCGAATACGCGGAATTTTTCGGGGTGGCGGGAGACAACG
TCCAGCGTGCTTTCGCCTATGCTGCCGGTACTGCCTAATATGGTCAGGACTTGTGGTGTC
ATAATGGGGATAACTTTATACCGGATGCCGTCTGAAGCGTTTTCAGACGGCATAGAATCA
ATTTAAAACCGACATCATCGCTGCATAGACGCTGATAACGGCAATCAGGCTGTCGGTACG
GTCGAACACGCCGCCGTGTCCGGGCAGCAGCTTGCTGCTGTCTTTGATGCCTGCCGCGCG
CTTGAGCCAGCTTTCCAAAAGGTCGCCGCATACGCTGACAACGGTCAGCACCAAACCGAT
TAACACGGTATCGAACCAGCCTGTATCGAATGCCAGCCAGCCGGCACTTCGTACGGCGGT
CATGTACACTGCCACGCAAACCGCGCCGCCGATTGCACCTTCCCAGCTTTTGCCGGGGCT
GATTGCCGGCGCGATTTTGTGTTTGCCGAAGGCCTTGCCGCTGAAATACGCGCAAATATC
GGCAACCCACACCAAACCCATCACGGCGAGCAGCGGCAGGGCATCATCGGGATGCGGGCG

CAGGGATACGAGCGCGAACCAAAACGGCATGACCAGAAGCCAGCCGACGGCATAAACCTG
CCAACCGCCGTTGAGCCTCCATTTGAATCTCAACCATAAAGGCATAACGGCGAGCCAAAA
TGCCAAAACAACATACCAAACCAAATTAGGCAGCATCCAGCCGCCCGCATAGGCAACCAC
GCCGAAAACCAAGGTTGCGGCGAGGTAATGGTTGGTTTTAATTTTGCACAAACCGCCCAT
ACGGGCATATTCCCACAAGGCAATCAGGGCAATCAGTCCGCAAAATGCAGCCCACAACCA
TTGCGGCGCGTAAAACAGCATGCCCAGCATCAGCGGCAGCAGCCACATGGCGGTTATTAC
CCGTTGTTTCAGCATATTCAGTTCCTTTGCTGTTCGATAGGCAGTTGCTCGGAGGTGCGT
CCGAACCGCCGTTCGCGTTTTTGGAACGAAGCGACGGCATCGTCCAAAGCCTTGCCGTCA
AAATCGGGCCACAAAATATCGGTGAAATACAGTTCTGCATATGCCATCTGCCAGAGCAGG
AAATTGCTGATGCGCGTTTCGCCGCCGGTGCGGATGAACAAATCCGGTTCCGGTGCATCG
CCCAGCATCAAGTGTTTCGCCAGCGTGTCTTCCGTAATCTCGGATACGCCTTCGGCAATC
AGTTTGTTTGCCGCCTGCAAAATATCCCAGCGGCCGCCGTAATCGGCGGCAATGCTCAGG
GTCAGGCCGGTATTGTTTGCCGTCAACGCTTCCGCCTCTTCGATGCCTTGCAGAATCTGC
CGGTTGAAGCGTTCGCGGCTGCCCAATATCTTCAGGCGCATATTGTTTTCGTGCAGGCGG
CGTACCTGTTTTTGCAAAGCCTGTAAAAACAGCCCCATCAGGAACGAAACTTCGTCTTCG
GGGCGGCGCCAGTTTTCGGTTGAAAAGGCAAACACGGTCAGATATTGCACACCCAGTTTG
GCGCAATGCTTCACCATATTTTCCAATGCGTCCAAACCGCGTTTGTGTCCCATTATGCGC
GGGAGGAAACGTTTTTTCGCCCAACGGCCGTTGCCGTCCATAATCACGGCGATATGCTTG
GGAATGGCGGTGTGTTCCAAAACGGCCTGCGTGCTGCTTTTCATGTCTGCCTTTCGCGGT
TCGGCATTCAAATGCCGTCTGAACGCCGAACCGTGCAGGTTAAATTGCCATCAAATCTTC
TTCTTTGGCAGTCAGGAGTTTGTCGGCTTCGGTAATGTATTTGTCGGTCAGTTTTTGAAC
CGCTTCTTCGCCGCGACGTGCCTCGTCTTCGGAAATTTCTTTGTCTTTGAGGAGTTTTTT
GATGTGGTCGTTGGCATCGCGGCGCACGTTGCGGATAGAGACGCGGCCTTCTTCCGCTTC
GCCGCGTACGACTTTAATCAGGTCTTTGCGGCGTTCCTCGGTCAGCATGGGCATCGGCAC
GCGGATCAGGTCGCCGACAGCTGCCGGGTTCAGTCCCAAGTTTGAATCGCGGATGGCTTT
CTCGACTTTGGCCGCCATATTGCCCTCAAACGGTTTCACGCCGATGGTGCGCGCGTCCAG
AAGCGTTACGTTGGCAACTTGGCTGACGGGGACCATGCTGCCCCAGTATTCGACTTCCAC
TTGGTCGAGCAGGCCGGTATGCGCGCGGCCGGTACGCACTTTCGCCAGATTTTCTTTCAG
TACTTCGACCGAACGCTGCATCTTGCCTTCGGCTGTTTTTTGAATATCGTTGATCATATT
GTTCTTTCGGTGGGATAAGGTGGGCGGGAGACCGTCTGAACGCGTTTCAAGCCGTTCAGA
CGGCATAAAGACCGTTAACCGCGAATAGTACCGTTATTCGGGCATAACGACAAGGTAGGC
GGATTGGGGATGCCGTCTGAAGCGACAGGCGTTTCAGACGGCATCGTGTCCGACCGTCAG
CCGTGTTCCCGTGTTTCAAGCAGGCTTTGGCGCAGGTGTTGGCGTTCGTGGGCATCCAGC
CATTTGCGGCGGGTGCGTTGCAGCAGGATGACGAGGGCGGAAATTTCCTGACGCATATTG
GTGCTGAGCCAGAGGAAGCCCTGCCATTGGTAGTGGAGGTGTTCGGCGAGGGCTTCCAGT
TCGGGGTTGATGGCGGTGTCGATGCGGATGCGGCGGGCGTGTCTGCCGTTGATAAGGGCG
ACGGTTTGTTGCAGGTCGGTTTGGAGCAGTGTGAAGTGGCGGTCAAGCAGCCGGATTTCG
CTGCCGTTGAGTTTGGGAGATTGCAGCTTGGCGGCGGTGGTCAGGAGCAGCTCGGTGGTG
TTGACGATTTTACGGTGGGCGTGCTGCATGGCTTCCATCATGGCGGGGCTGATGCGGCTT
TCGCCCGATGTGGCGGCGAGATGGCTGCGGCTTTTGACCATGCGTGCGTTGATTTGGCGC
ATTTTCGCCATGTTCTCCTCGAGGCGTTCGCGGGTCATGCGCCTGCCGTTGCTGATTTCG
GCAATCATTTTGCTGCAGTCGGCCAGGTTGTCGGCAAGCATGAAACGCCACATCAGTGTG
GATTTCAGCGGCAGCAGTTTGGCGGCGGCGATGGCGATGGCCGCGCCGATGAGGACGTTC
ATGGCGCGCATGAGTCCGCTGTCGAGCCATTCGCTGCCGTTGTCGCCGATGAGCATACAC
ATCGTCAGCCCTGCCAGCATAGGGACGTAGCCGTTTTTGCCGACCGCCGCCCAGCCGGCC
AGTGCGCTTGCCGTGCCGACGGTGAGGTAGAAGAGGAGGTTGCCGTGGAAATAATGCTGG
TTCAGCCATAAAACGCCCAAACCCGCGCCCAGCCCGATGACCGTGCCGAGCATACGTTCC
ACCGCCTTGGAGTAAATCGCCCCTTGAAACTGGAGCATGCCGAGGACGACGAAGACGGTC
ATCCCTATCCACTCGCCGTGTTGGAGGTGGAGCAGCCGGGCGGAGGCGGTGGCGAACAGG
ACGGCCCCGCCGAGCCGGACGGCGTGGATGAGGCGGCGGTAGCGGTAGCGTTCGTAGGAG
TTGAGCCAGCGGCTGACGAGGCGGTTGCGTTGCGAGGTGTTCATATCGGTTGTGCCGTCT
GAAGCGGAAATGTGAAAAAGCACAGGCTTCCCGAGGAAGGGAGGGTCTGTGCTTGGTATT
GGTGCCGGAGAAGGGAATCGAACCCCCGACCTTCGCGTTACGAATGCGCTGCTCTACCGA
CTGAGCTACACCGGCGTTTTTTCGTCATGATATATATGAACGGTTGTTTGTGCAACTTTT
CGGGCGGGCGGCAAGGCAGTGCGCGGTATAGTGGATTAACAAAAACCAGTACGGCGTTGC
CTCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTGCTCAAGCACCAAGTGAATCGGTTC
CGTACTATTTGTACTGTCTGCGGCTTCGTCGCCTTGTCCTGATTTTTGTTAATCCGCTAT
ATAATGCGGTCTGCTTCGGAAGAGGGGGACGGCGATGTTTGTGAACGAGAAATATCCTTA
TGCGGCTCTGTTTGCGGGACTGGTGTTTTTGACGCTGCCGTTTGCGTTGGCGGTGCATGA
TGCCTTTGCGCTTGCGTTCGGACGGACGGGGTTGCTGGTGTCGGTGTCGGACGGCGGATT
CGGCTGGCGTGGCGGTTGGGACGGCACTGTTTGGTTTGTGTTCGGTGTGTTTGCGTTTTT
GAATGTGGTTGTGTCGGCGGGTCTGACGAAACTGGCGTACAAAAAGATGATGCGGCGGCA
TTCGCGTTACACACTGTTTCTGTCGGGCGTGGCGGCTTGCGCGGCGGCAGCGGTGGCTTG
GATTTTCGAGCTGCTGCTTGGCAGTGGGGCTTTGGGCGGGCTGCGGGGGAGGCGGTGTTG
GAATATGCGTTTGCCGTGTGGCTGGTGGCGATGCTGACGCTGCCCAAACGCCTGACGCGC
GCGCCGGTGCAGCCGGTGGTGTTTCACAGGAAAAAATAGGTTGGAACGGGAAATGCCGTC
TGAAACCCGACACGCGGTTTCAGACGGCATGTTTTTCCGCTAACATTACGCCTGAATATG
GACAGGAAGCAGATATGGAACGCAAAGAACGCCTGCGTGCAGGCATTGCCGCGATGGGGC
TGGATATTTCGGAAACGGCGCAGGACAGGCTTTTGGTCTATGTGGATTTGTTGAAAAAGT
GGAACAAAAACCTACAATCTGACCGCCCTGCGCGACGAGGAAAAAATGATTGTCCATCATC
TTTTGGACAGCCTGACGCTGCTGCCCCATATCGAGGGTGTGCAAACGATGCTGGATGTCG
GTTCGGGCGGCGGTCAGCCCGGCATTCCGGCGGCGGTGTGCCGTCCGGATGTGCAAATAA
CCCTTTTGGATGCGAATACGAAGAAAACGGCTTTTTACAGCAGGCGGTTATCGAGTTGG
GGTTGGACAATGTGCGCGTGGTATCCGGACGCGTGGAGGCGGTTTCGGACGTGCGTGCCG
ATGTGGTTACCAGCCGTGCGTTTGCAGAACTGGCGGATTTTGTGTCGTGGACGGTGCATC

TGTTGAAAGACGGCGGCTACTGGGCGCCGATGAAGGGCGTCTATCCGCAGGAAGAAATCG
GCCGCCTGCCGCAGGATGTGTGCGTTGAAAAAGTCCAAAGGCTCGACGTGCCGGGCTTGG
ATGCGGAACGCCATATCGTCATCCTGAGCAAGCGTTCAGCGCACTTCAGACGGCATGAAT
ACCTTTTTTGTGCGGATAAAGGTAAAATTCCGCACTGTTTTTCTTTTTTCAACATCAGAC
GGGACACGGGCGGGACATGAGTGCGAACATCCTTGCCATCGCCAATCAGAAGGGCGGTGT
GGGCAAAACGACGACGACGGTAAATTTGGCGGCTTCGCTGGCATCGCGCGGCAAACGCGT
GCTGGTGGTCGATTTGGATCCGCAGGGCAATGCGACGACGGGCAGCGGCATCGACAAGGC
GGGTTTGCAGTCCGGCGTTTATCAGGTCTTATTGGGCGATGCGGACGTGCAGTCGGCGGC
GCTACGCAGCAAAGAGGGCGGATACGCTGTGTTGGGTGCGAACCGCGCGCTGGCCGGCGC
GGAAATCGAACTGCTGCACGAAATCGCCCGGGAAGTGCGTTTGAAAAACGCCCTCAAGGC
AGTGGAAGAAGATTACGACTTTATCCTGATCGACTGCCCGCCTTCGCTGACGCTGTTGAC
GCTTAACGGGCTGGTGGCGGCGGGCGGCGTGATTGTGCCGATGTTGTGCGAATATTACGC
GCTGGAAGGGATTTCCGATTTGATTGCGACCGTGCGCAAAATCCGTCAGGCGGTCAATCC
CGATTTGCACATCACGGGCATCGTGCCCACGATGTACGACAGCCGCAGCAGGCTGGTTGC
CGAAGTCAGCGAACAGTTGCGCAGCCATTTCGGGGATTTGCTTTTTGAAACCGTCATCCC
GCGCAATATCCGCCTTGCGGAAGCGCCCACCCACGGTATGCCGGTGATGGCTTACCACGC
GCAGGCAAAGGGTACCAAGGCGTATCTTGCCTTGGCGGACGAGCTGGCGGCGAGGGTGTC
GGGGAAATAGGTCAATCCAAATCGGGCTGCCCGTGCCTTTATGCTGTTTGGCCGGGTGCG
TTATAGTGGATTAACAAAAATCAGGACAAGGCGACGAAGCCGCAGACAGTGCAAATAGTA
CCGAACCGATTCACTTGGTGCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCTAAGGCG
AGGCAACGCCGTACTGGTTTTTGTTAATCCACTATAATATGGCGGATTAAAATAAAAATA
CTTATATCCTCATTTATCCTCATTCCCGCAAAAACAAAAAAATCAAAAACACAAAACTGA
AATATCGTCATTCCCGCGCAGGCGGGAATCTAGGTCTGTCGGTACGGAAACTTATCGGGA
AAAACGGTTTTTCCAACCCTGAGACTCCGGATTCCTGTTTTCGCGGGAATCCGGTTTTTT
GAGTTTCAGTCATTTTTGATAAATTCTTGCAGCTTTGAGTTTCTAGATTCCCGCTTTTGC
GGGAATGACGCGGAAAAGTTGCTGTGATTTCGGATAAATTTTCGTCACGCTTAATTTCTG
TTTTATCCGATAAATGCCTGCAATCTAAAATTTCGTCATTCCCGCAAAAACAAAAAATCA
AAACAGAAGCCTAAAATTTCGTCATTCCCGCCAAGGCGGGAATCTAGGTCTGTCGGTACG
GAAACTTATCGGGAAAAACGGTTTTTCCAAACCTGAGACTCCGGATTCCTGTTTTCGCGG
GAATCCGGTTTTTTGAGTTTCAGTCATTTTTGATAAATTCTTGCAGCTTTGAGTTTCTAG
ATTCCCGCTTTTGCGGGAATGACGCGGAAAAGTTGCTGTGATTTCGGATAAATTTTCGTC
ACGCTTAATTTCTGTTTTATCCGATAAATGCCTGCAATCTAAAATTTCGTCATTCCCGCG
AAGGCGCGAATCTAGGTCTGTCCGTACCGAAACTTATCGGGTAAAACGGTTTTGCCAGCC
CTGAGACTCCGGATTCCTGTTTTCGTACGAATCCGCTTTTTTGAGCTTCACTCATTTTTG
ATAAATTCTTGCAGCTTTGAGTTTCTAGATTCCCGCTTTCGCGGGAATGACGGTTTGGAA
GTTACCTGAAATTCAAAAAAAAAACGGAAACCGGACGGATTGGATTCCCGCCTGCGCGGG
AATGACGGATTTTAGGTTTTTTTTTTGATTTTCTATTTTTCGCGGGAATGACGGTTTGGC
TTCTTTCTCTTTGGAGTTGCGATGCCGGAAATGCCGTCTGAAGGCTTCAGACGGCATTTT
TGTGCCGGTTTAAAACAAGGCCTGCTGCGCGAGCACGTTTCTGACGGGGGCGAAGTCGCG
GCGGTGTTCGGGCAGCACGCCGTATTTTTCGAGGGCTTCCAAATGCTGCTTCGTGCCGTA
ACCTTTGTGTTTCTCGAAACCGTATTGGGGATGGCGTTGCGCCAGTGCGTACATTTCCGC
ATCGCGTGCGGTCTTTGCCAAAACGGATGCGGCGGAGATTTCGATGATTTTGCTGTCGCC
TTTGACGACGGCTTCGGCAGGGATGTTCAAATGTTCAGGAATGCGGTTGCCGTCGATGAA
TATTTTTTCGGGACGCACAGCCAAGCCGTCAACGGCGCGTTTCATCGCGAGCATGGTGGC
GTGCAGGATGTTGAGGCTGGCCATTTCTTCGGGCGAGGCGGCGGCAACGTGCCACTCAAC
CGCCTGATTTTTTATCATTTCGGCAAGCGCGTCGCCTTTTTTCTCGCTGAGTTTTTTGGA
GTCGGTCAGTCCCCGCAGGTCGAATGTTTCCCGAAGGATGACGGCGGCGGCAAACACGCT
GCCGACTAAAGGTCCGCGTCCTGCCTCGTCCACGCCGGCGGTCAGTATGTGCATGATGTT
TCCTGTCGGGATGGTGGGAATGCCGTCTGAAAAGGGTTTCAGACGGCATCGCGCCGATGT
GTTTATTTCGCGTCTTTAAACCCGCGCTTCAAATGCACCATCAGCAATGCCACTGCCGCA
GGGGTTACGCCGGAAATGCGGCTGGCTTGTCCGACCGTTTCGGGTTTGTGCTGGTTGAGC
TTTTGCTGCACTTCTGCCGACAAGCCTTTGACTTTCCCGTAATCGATGCCCTCGGGCAGT
TTTAAGGTTTCGATGTCGCGGCCGCTGTCGATTTCTTCGTTTTGGCGGTCGATATAGCCT
TGGTATTTGACTTGGATTTCGACTTGTTCGATGACTTCGGCGGAGAGGTTTTCAGACGGC
ATCGCGCCTTCGAGCGTCATCAGCGCGGCGTAGTCGAGGTTTGGGCGGCGCAGGAGGTCG
TGCAGGTTGGCTTCGCGGCTGAGTTTTTGTCCGAACACACGGATTTGTTCGCCTTCGGCG
AGTTTTTGCGGCGTGTACCACGTTGTTTTCAAACGTTGGATTTCGCGTTCGACGGCTTCG
CGTTTTTCGTTGAACATCCGCCATTGCGCTTCGGACACCAAGCCGATTTTGTAGCCGTCT
TCGGTCAGGCGCATGTCGGCGTTGTCTTCCCTGAGTTGCAGGCGGTATTCGGCGCGGCTG
GTGAACATTCGGTAGGGTTCGTTCACGCCTTTGGTGATGAGGTCGTCCACCAATACGCCG
AGGTAGGCTTGTTCGCGGCGCAGCAGGAGCGGGTCTTGTCCGCGCACATATTGCACGGCG
TTCGCCCCTGCCAATAAACCTTGCGCGGCGGCTTCTTCGTAGCCGGTCGTACCGTTGATT
TGCCCGGCGAAAAACAATCCGGCAATGCTTTTGGTTTCGAGGCTTCCTTTGAGGTTGCGC
GGATCGAAGTAGTCGTATTCGATGGCGTAGCCGGGGCGCAGGATATGGGCGTTTTCCAAA
CCTTTCATACTGCGGACGAGCGCGATTTGGATCTCGAACGCCAGCCTGGTGCAGATACCG
TTAGGATAGTATTCGTGCGTGGTCAGACCTTCGGGTTCGAGGAAAATCTGGTGGCTGTCT
TTGTCGGCGAAGCGGTTGATTTTGTCTTCGATAGACGGACAATAACGCGGACCCACGCCT
TCGATTTTGCCGGTAAACATCGGGCTGCGGTCGAAGCCTGAGCGGATGATGTCGTGGGTT
TGCGTGTTGGTATGCGTAATCCAGCAGGACACTTGGCGCGGGTGCATATCGGCGTTGCCG
CGCACGGACATGACGGGAACGGGCGTGTCGCCGGGCTGTTCGGTCAGTTGGGAGAAGTCA
ATCGTGCGTCCGTCAATACGCGCCCGCCTGCCGGTTTTCAGACGGCCTTGCGGCACCTTC
AATTCGCGCAAACGTCCGCCCAACGATTTGGCGGCGGGGTCGCCGGCGCGTCCGCCTTCG
TAGTTTTCCAAACCGATGTGGATTTTGCCGGACAAAAACGTGCCTGCGGTCAACACGACG
GCGCGTGCTTTAAACTCCACGCCCATCGCGGTAATTACGCCGCTGATGCGTTCGCCGTCG
AGCGTTACGTCTTCGACGGCTTGTTGGAAAAGGTCGAGGTTTTCTTGGTTTTCCAACATT

TCGCGGATGGCGGCTTTGTACAGGATGCGGTCCGCCTGCGCGCGCGTGGCACGCACTGCC
GCGCCTTTGCTGGCGTTCAGGCGGCGGAACTGGATACCGGATTTGTCGGTTGCCAACGCC
ATCGCGCCGCCGAGCGCGTCGAGTTCGCGCACCAAATGCCCTTTGCCGATGCCGCCGATA
GAGGGGTTGCACGACATTTGTCCGAGCGTTTCGATATTGTGTGAGAGCAAAAGCGTCTGC
GCGCCCATACGGGCGGCGGCGAGTGCGGCTTCCGTGCCGGCGTGTCCGCCGCCGACGACG
ATAACGTCGTAGGTTTTGGGGTAAATCATGTGGGTCATAGTGTGTATTGCCTGACGGTGT
TTCAGACGGCATTTATAGTGGATTAACAAAAACCAGTACAGCGTTGCCTCGCCTTAGCTC
AAAGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTTCGTACTGCTTGTA
CTGTCTGCGGCTTCGTCGCCTTGTCCTGATTTTTGTTAAACCACTATATTCAATATGCCG
TCTGAAAAACGAAATGGATTCAAAAGTAAAGGGTTGGGATTGTACGCTTGTTCGCCCTGT
TTTTACAGTGTGCGGAAAGGGAAAAGCCGCTTCGCGGGGAAGCGGCTCCGGTAAGGGCGG
GATTTACCAAACGTCGGATTTGATACGGCGTTTCAGGCCCGGATGTTCGGAAAGTTTGAA
CTCGGGGTCTTTGCCCATTTTCAGCTTGGCGGTGTAATCGCGCAGCAGCATAAACGCCAA
GGGCGAGAGCAGCAGGATGGCGACAAGGTTGATCCACGCCATAATGCCCATCGCCATATC
CGCCATATCCCAGACCAAAGGCACATTGGCAACCGCGCCGAAATAGACCCACGCCAAAAC
CAGCATACGGAAAACGGCGGTAATCAGCCAATGGCTTTTGATGAATTGGACGTTGGACTC
GGCATAGGCATAGTTGCCGATAACGGTGGAAAAGGCAAACATAAACAGGATGACGGCGAG
GAAGCCCGCGCCCCATTGCCCCACTTGGCTGACAATCGCCGCCTGCGTCAGCGCCGCACC
GCTCAAATCGCCGTAAGGCTGTTGGTAAATCAAGATGATGAAGGCGGTGCAAGAACAAAC
GATGATGGTATCGACAAACACGCCCAGCATTTGAATCATACCTTGCGAAACAGGGTGTTT
CACTTCGGCGGCGGCGGCGGCGTTCGGCGCGGAACCCATACCCGCCTCGTTGGAATACAG
GCCGCGTTTGATGCCCATCATCATCGTTTGCGAAATCAGACCGCCGAGTAAGCCGCCTGC
TGCCGCGTCGAATTTGAACGCGCCCGAAAAAATCTGACCGAACACGTCCGGAATCATCGG
AATATTGGTCAAAATGATGAAAAGCGCGATAAAGAGGTACAAAACCGCCATCAGGGGGAC
GACGATTTCCGCCGCTTTAGATATGCGCCTGATGCCGCCGAAGATAATCGGCGCGGTTAA
AATCACCAGGGCGACGCCGACATAATGAGGCTCCCAACCCCATGCCGCTTTGACGGTATC
GGCGATGGTATTGGTCTGAACCGCTTCAAACACAAAGCCGAAACAGAAAATCAGGCTCAG
GGCGAACAACACGCCCAGCCATTTCTGCCCCAGCCCTTGAGTGATGTAGTAGGCAGGGCC
GCCCCGGAAATGGTGGTTGTCGTAGTCGCGGACTTTAAAGAGCTGCGCCAGCGAAGATTC
GACAAACGCCGAACTCATACCGATTAAGGCGGTTACCCACATCCAAAACACCGCGCCCGG
TCCGCCGACTTTGATGGCGATGGCCACGCCCGCGATATTGCCCACGCCCACGCGGCTGGC
AAGGCCGGTTACAAATGCCTGAAACGGCGTGATGCCGTGAGGGTCGTCCCCCTGTTTGCG
GCCGCCGAGCATTTCTTTGATGCTGCGCCCGAACAGGCGGAATTGGACAAAGCCCGTGGT
TACGGTGAAGAAAAGCCCCGTACCCAAAAGCATATAAACCAAGTATGACCACATCGGATC
GTTGATGGCGCCGACCCAGCCGTGCAGCCATTCGGTAAAGTTCTCGTTCATATCGCTTCC
TTAAAGTTGAAACTCGCACATATTGGCGGTATGCAAGCAGGGTTTAAATTTTGTAAACGC
CCATTCTAGCAGATTGTCAACAAAATCAGAAAAATTTACATCGCCGCGCGGCTGCGGCGT
TAGAATCGCATTTTGTTTGGAGCAAACACGATGAAACAGCCTGTTTTTGCCGTTACTTCC
GGCGAGCCTGCCGGCATCGGCCCCGATATTTGTTTGGACTTGGCGTTTGCACGCCTGCCC
TGCCGCTGCGCGGTATTGGGCGACAAAAACCTATTGCGCGCGCGCGCCGAAGCCTTGGGC
AAAAGCGTCGTCCTGCGCGACTTCGATCCAGAATCAGGCGGCGCGGCATACGGCGAGCTG
GAAGTGCTGCACATCCCTGCCGTCGAAGCGGTTGAGGCGGGCAAACTCAATCCCGCCAAC
GCCGCCTATGTGCTGCAACTTTTGGACACCGCGCTCGCAGGCATTTCAGACGGCATTTTC
GACGGCATCGTTACCGCGCCGCTGCACAAAGGCATCATCAACGACGCGCGCGCAAGCACA
GGTTTTTTCAGCGGACACACCGAATATCTGGCGGAAAAAAGCGGCACGGGGCAGGTCGTG
ATGATGCTTGCCGGCAAAGGCCTGCGCGTCGCCCTCGTAACGACCCACCTGCCGCTGAAA
GACGTTGCCGCCGCCATCACGCAACCGCTGATTGAAAGCGTCGCACGCATTTTGCATCAC
GACTTAAAACACAAATTCGGCATCAAAAATCCCAAAATCCTTGTCGCCGGACTTAATCCC
CACGCCGGCGAAGGCGGACACCTCGGACACGAAGAAACCGACACCATTATCCCTGCATTG
GAAAACCTGCGCCGCGAAGGGATAAACCTTGCCGGCCCGTATCCGGCGGACACATTGTTC
CAGCCGTTTATGCTCGAAGGTGCGGATGCCGTATTGGCGATGTACCACGACCAAGGGCTG
CCCGTGTTGAAATACCACAGCTTCGGACAGGGCGTGAACATCACGCTCGGCCTGCCCTTT
ATCCGCACCTCCGTCGATCACGGCACCGCGCTTGATTTGGCGGCAACCGGCAGGGCGGAT
TCCGGCAGCCTGATAACTGCCGTGGAGACCGCCGTCGAGATGGCGCGCGGCAGCCTTTAA
AGATGATAAAAGACCCGTCATTTCCGCGCAGGCGGGAATCCGGTCTGTTCGGTTTCAGTT
GTTTTTGGGTTTCGGGTAATTTCCAAATCGTCATTCCCGCGCAGGCGGGAATCCAGACCA
TTGGACAGCGGCAATATTCAAAGATTATCCGAAAGTTTGAGGTTCTAGATTCCCGTTTTC
ACGGGAATGACGAAAGGTGGCGGGAATCCGGTCTGTTCGGTTTCGGTTTTTTTTTTTGAG
GTTTCGGGCAACTTCTAAACCGTCATTCCCGCGCAGGCGGGAATCCAGACCATTGGACAG
CGGCAATATTCAAAGATTATCTGAAAGTTTGAGGTTCTAGATTCCCGTTTTCACGGGAAT
GACGGAATGTTGCGGGAATCCGGCTTGTTCGGTTTCGGTTTTTTTGAGGTTTCGGGCAAC
TTCTAAACCGTCATTCCCGCGCAGGCGGGAATCCAGACCATTGGACAGCGGCAATATTCA
AAGATTATCTGAAAGTTTAGAGGTTCTAGATTCCCGTTTTCACGGGAATGACGGAATGTT
GCGGGAATCCGGCTTGTTCGGTTTCGGTTTTTTTGAGGTTTCGGGCAACTTCTAAACCG
TCATTCCCGCGCAGGCGGGAATCCAGGCCTTTGGGCGACGGCAATATTCAAAGATTATCT
GAAAGTTTAGAGGTTCTAGATTCCCGTTTTCACGGAAATGACGAAATGTTGTGGGAATCC
AGACCTTCGGGCAGCGGCAATATTCAAAGGTTATCTGAAAGTTTGAGGTTCTAGATTCCC
GTTTTCACGGGAATGACGAAAGGTTGTGGGAATCCAGACCTTCGGGCAGCGGCAATATTC
AAAGATTATCCGAAAGTTTGAGGTTCTAGATTCCCGTTTTCACGGGAATGACGAAAGGTG
GCGGGAATGACGAAAGGTTGCGGTAATCATGGGAATGGCGAAGTTTCAGACGGCATCGTC
CACCCTCCGCCGTCATTCCCGCGCAGGCGGGAATCCAGGCCTTTGGGCGACGGCAATATT
CAAAGATTATCCGAAAGTTTGAGGTTCTAGATTCCCGTTTTCACGGGAATGACGGAATGT
TGCGGGAATCATGGGAATGACGGAATGTTGCGGGAATCATGGGAATGACGGAATGTTGCG
GGAATCATGGGAATGACGGAATGTTGCGGGAATCATGGGAATGGCGGAATGTTTCGGTAA
TCACGGGAATGGCGAAGTTTCAGACGGCATTGCAGGTATCCGAACCCATGTAAAAAAGAG

GTTCTGCGGAACAGAACCTCTTTTTGCCGCCGTCGGTTCAGCCTTGCCGGGTTTCGACTT
GGATCATTTCTTCGGCAGGGACGGTTGCGACTTCAGACGGCTTGGGCTGTTCGGAACGGC
GCAAACCGCGTCCGGCTTGGACTTCGGGTTGTGCCGCCCATGCCTTCAATGCGGCAGGGT
CGGTTTCGATCAGGACGAGTCCGCCGGTTTGTGCGGTTTCCCGTGCCTGTTCCGCCGCAG
CCGTAAAGGTTGCGGTTTCAGACGGCATTTCCTGTGCTTCGGCTTTCGGTGTCGCGCCTT
CGGGCAGGATGGCGGCGGTGGCACGGCGGATTTTTTCCGCCGCATCATAAACCGGTGCGT
CGCCGTTTGAAACGGCGGGAGATGCTGTCGGAAGATCCCTTTCTGCAACCGGATCGGCAA
TGCTGACAGTAATCGGCGCGTTTGCGTCGGTTTCGCCGAAAACGTGCGCGGCGGCGGAAC
GGACTTTGTCGGCGGTGTCGTGAATATTCAGGTACTGCTCGATTTTGGCGGCAGACGGAA
TATTGCGTTTTTTGCCGTTTTGACGGCGGTCGCGCTGATTGTTGCGCTCGCGGCGTTCTT
TGGCATCTCGGCTGTCGCGTTCGCGGCGGTTGCGTTCGGATTTGGGCTTGCTGCCTTTGT
CTTCTGCGGTATGCGGTTCGGACGGCGTGTTTTCCGCTGTCTGAACGGTTGTTTCGGCAA
CGGTGGCGGTTTCCGGCGCGGTTTGGCCGCGTTCGCTGCGGCTGCCGTTGCGGCGGCGTT
TTCCGGTTTGCACTTCGGTTTCGGACGGTGCGGCATCTGCAACGGTTGCGGCAGGCTGTA
CGTTGCGGCTTTGGATTTCCGCTTCGTTGGCGCGTTCGGCGGCACGGTCGCCGCGTTCAT
TGCGGCGGCGGTTGCCGTTGTTGCGCGTTTCGGCTTTGTCGGCACGCGCTTCCTGTCCGG
CAGTTTTGCCTGCCACTTCGCGGACTTCTACTTTGCTGCCTTCGCGTTTGCTGCGGCGCG
GGTTTTGGCGGCGGTTGTTGGCGCGGCTGCCGCTGCGGTTTGCCGTGCTGCGTTTTTCGG
AGGTTTCGGCAGCGGGCGCGGCTTGGGTTTCGCTGCCGCCGAAAATGCGTTTGAGCCATG
CTTTGAAGCTGTCCCACCAAGAGGTTTTTTTCTCGGGGGCGGCAGTCGGGGCGGGGCTGG
TGTGGCGCACGCCTTTGACGGCGGGTTCGGGACGGGCGGCTTTGGCTTTTTCGCCGCCGA
ACGGTTTGGCGGATTCGTCTTCTTCCGGCTCGGCGACGCGTTTGTAGCTCGGTTCGCCGT
CTTCTTCTACGTCGTCGGTGCGGATGCGGTTGATTTCGTAGTGCGGATTTTCGAGGTGGA
TGTTCGGAATCAGGACGACGTTGACATCCAAACGCTCTTCCATCGCAAACAGCTCGGCGC
GTTTTTCGTTCAGCAGGAAGGTGGCGACATCGACGGGCACTTGTGCGCGCACTTCTCCGG
TGTTGTCCTTCATCGCTTCTTCTTGAATGATGCGTAAAACGTGCAGGGCGGTGGATTCGA
TGCCCCGAATCACGCCGGTGCCGGCGCAGCGCGGACAGGCGACGTGGCTGCTTTCGCCCA
AAGCCGGTTTCAAACGTTGGCGGCTCAATTCTAAAAGTCCGAAACGGGAGAGTTTGCCCA
TCTGCACGCGGGCGCGGTCTTTTTTGAGCGCGTCGCGCAGGACGTTTTCCACATCGCGCT
GGTGTTTGGGGTTTTCCATGTCGATGAAGTCGATGACGACCAAGCCGCCCAAGTCGCGCA
GGCGCATTTGTCGGGCGACTTCTTCGGCGGCTTCCATATTGGTTTTGAACGCGGTGTCTT
CAATGTCTGCGCCGCGAGTGGCGCGTGCGGAGTTCACGTCGATGGAGACGAGGGCTTCGG
TATGGTCGATGACGATCGCGCCGCCGGAGGGCAGGCTGACGCTGCGCGAAAACGCGCTTT
CGATTTGGTGTTCGATTTGGAAGCGGGAAAACAGCGGCGTGTGGTCTTCGTAGAGTTTCA
GACGGCCTATATTGCCCGGCATGACGTAGCTCATGAACTCGGCAACTTGGTCGTAAACTT
CTTGATTGTCCACCAAAATCTCGCCGATGTCGGGGCGGAAATAGTCGCGGATGGCTCGGA
TCAGCAGCGAGCTTTCCATAAAGAGCAGGTAGGGGTCGTGATGCGCTTTTCCTGCTTCTT
CAATCGCCTGCCAGAGTTGTTTGAGGTAGTTCAAGTCCCATTCCAACTCTTCCGCGCTGC
GGCCGATGCCGGCGGTACGGGCGATGATGCTCATGCCGTTCGGAATGTCGAGTTCCGCCA
TGGCGGCTTTCAACTCTTGACGCTCTTCACCTTCGATACGGCGGGATACGCCGCCGCCGC
GCGGGTTGTTCGGCATCAATACCAGATAGCGTCCGGCGAGGCTGATGAAGGTGGTCAGCG
CGGCGCCTTTGTTGCCGCGCTCGTCTTTTTCGACTTGGACGATGACTTCCATGCCTTCTT
TGAGCACGTCTTGGATGCGCGCGCGTCCGCCTTCGTAGTCTTGGAAGTATGAGCGGGAGA
CTTCTTTAAACGGCAAGAAGCCGTGGCGGTCGGTTCCGTAATCCACGAAACACGCTTCCA
GCGACGGCTCGATGCGGGTAATGATGCCTTTGTAGATATTGCCTTTGCGCTGTTCTTTGC
CCAGCGTTTCGATGTCCAAATCCAGCAGGTTTTGTCCGTCGACGATGGCAACGCGCAGCT
CTTCGGCCTGCGTTGCGTTAAATAACATTCTTTTCATGATCACCTCGTGGGCAGGCGGCG
TTCAGACGGCACATGCCCGGTTCGGCATTCCGTAAGGCTGGGTTTTCCGATGTTTTCGGA
TAAAACCGGTAATCAGTTTTTGAGTTGAAAATCCGCAGGGATGCACGTTCCGGAGAACCG
TGTGCGGAAGGGTCGGATACAGAAGGCTATAAAGATCGATGCGGCGGTTTGTCTGCCGCG
TTCCGAACGCTGCGGTCGGAAAAATGGGGGCCGGCTTCTTCTTGTTATCGTGATGCCTGT
GTTTTGGGCGGTTTGCGTTTGGGACTTGGGCCCGGCTGCCGTCTTACTTCCGCGCCGAAA
CGGCAAAATCAATTCAAACTTGATTACGTTCTGCGCCTGCCGGCTGGGAACAGGCGCAGG
GAAAATGCTTTGCGGAGTGCGTTTTTAATATAAAATTCCGTTTTAAAGTAAACCGTTTCA
GGAGGCGCGGCGGGCGCGCTTTTTGCTGAAACGGATGTTCGGATTATAGATGAAAACGCA
CGAAATAAGCAAAGATTCGGTCAGCTTGATAGGGGTTGCCGAACATGAGGCGGGTCAACG
CCTTGATAACTATCTGATAAAAATCCTCAAGGGTGTTCCCAAGAGCCATATCCACCGCAT
TATCCGCGCCGGCGAGGTGCGGTTGAACAAGAAACGCTGCAAACCCGACAGCCGTATTGC
GGAGGGGGATACGGTGCGGATTCCGCCTGTGCGCGTGGCGGAGAAGGAAATGCCGTCTGA
AAGGCGTGCCGCCGTACCGGCGCGTGCGTTTGACGTTGTTTACGAAGACGATGCGCTTTT
GGTCATCGACAAACCGTCCGGCGTTGCCGTCCACGGCGGCAGCGGCGTGAGTTTCGGCGT
TATCGAACAGTTGCGCCGCGCCCGTCCGGAGGCGAAGTATTTGGAGTTGGTTCATCGTTT
GGACAAGGATACGAGCGGCTTGTTGATGGTGGCGAAGAAACGCAGCGCGCTCGTCAAACT
TCACGAAGCCATCCGTAACGACCACCCCAAAAAAATCTACCTTGCGCTGGGGGTGGGCAA
ACTGCCGGACGACAATTTCCATGTCAAACTGCCCCTGTTCAAATATACCGGCGCACAAGG
CGAAAAGATGGTGCGCGTCAGTGCGGACGGGCAGTCGGCGCATACGGTGTTCCGTGTGTT
AAGCCGTTTTTCAGACGGCATTTTGCACGGTGTCGGGCTGTCGCACCTGACTTTGGTGCG
GGCGACGTTGAAAACGGGGCGCACGCACCAAATCCGCGTCCACCTGCAATCTCAAGGCTG
TCCGATTGCGGGCGACGAACGCTACGGCGATTATCAGGCGAACCGTCGTTTGCAGAAGTT
GGGTTTGAAGCGGATGTTTTTGCACGCGTCCGAGCTGCACTTGAACCATCCGCTCACGGG
CGAGCCGCTGGTGTTGAAGGCGGAGCTGCCGCCGGACTTGGCGCAGTTTGCGGTGATGTT
GGAAAACGGACGAAAATGTGAACCCCGATGCCGTCTGAAGCCTTCAGACGGCATCGGGA
CGTGAAAGTATGTGGGGACAGACGAATATGGCTGATAAAAAAAGCCCTTTGATTGCCGTC
AGTGTCGGCGAAGCGTCGGGCGACCTATTGGGGGCGGACCTGATACGCGCCATCCGCAAG
CGTTGTCCGCAGGCGCGGTTTACCGGTATCGGCGGCGAACTGATGAAGGCGGAAGGTTTC

GAGAGCCTTTATGATGAGGAGCGGCTGGCGGTGCGCGGCTTTGTCGAAGTGGTCAGGCGG
CTGCCGGAAATTTTACGGATACGCAGGGGGGTGGTACGGGATTTGCTGTCGTTGAAACCT
GATGTCTTTGTCGGTATCGATGCGCCCGATTTTAATTTGGGTGTGGCGGAAAAGCTGAAA
CGGTCGGGGATTCCGACCGTGCATTATGTCAGCCCGTCGGTGTGGGCGTGGCGGCGGGAA
CGTGTGGGCAAAATCGTGCATCAGGTCAACGGCGTGTTGTGCCTGTTCCCGATGGAGCCG
CAGCTTTATCTGGATGCGGGCGGACGTGCGGAGTTTGTCGGTCATCCGATGGCGCAGCTT
ATGCCCTTGGAAGACGACCGTGAAACGGCGCGGCAAACTTTGGGCGTGGATGCCGGCATC
CCCGTATTCGCCCTGCTGCCCGGCAGCCGCGTCAGCGAAATCGACTATATGGCGCCGGTG
TTTTTTCAGACGGCATTATTGTTGTTGGAACGCTATCCCGCCGCACGCTTCCTGCTGCCT
GCCGCAACGGAGGCGACGAAGCGGCGTTTGGCGGAAGTTTTGCAGCGGCCGGAGTTTGCC
GGATTGCCGCTGACGGTAATCGACAGACAGTCTGAAACAGTGTGCAGGGCGGCGGATGCG
GTGCTGGTAACGAGCGGTACGGCAACTTTGGAGGTGGCGTTGTGTAAGCGTCCGATGGTC
ATCAGCTACAAGATTTCGCCGCTGACCTATGCTTATGTGAAACGCAAAATCAAAGTGCCG
CATGTCGGCCTGCCGAATATCCTGTTGGGTAAGGAGGCTGTGCCGGAATTATTGCAATCT
GAAGCAAAACCGGAAAAACTGGCGGCGGCGTTGGCGGACTGGTACGAACACCCCGATAAG
GTTGCCGCGCTGCAACAGGATTTCAGGGCGTTGCACCTGCTGTTGAAAAAAGATACGGCG
GATTTGGCCGCGCGCGCGGTTTTGGAAGAGGGGGATGTTGAGCGGTTAATGGATTATTT
TGCCGAAGCAGCACGTATTACAAAAAAAGGGGGAGAAATTGTGATTAATGGCAGATCAAA
CAATAAGTATTTAAGAGGAATTCCAAATGAAACAGAACTGGCCCGAATGGGATTAAGGTT
AAAATATAATGGTCAGTTAACTGATTAATTTTGTTATATATGATTTATGATTATAGCTTA
TACTAATACGCTTACTTACCTTGTTTCATTTGTTCTTCGTAAATTTCTATTTTAGGCAAT
TGTGTCAGTTCAATAGGGCAAGTTGCTCCCCACCAAAAATGTTCTACATAAAACCAAGGA
TTATCTGGAAAATATAGCAACATCTCTTCCATATCCGGCCAAATTCTTGTTAATTCATCT
ACCTGTGTTTTTGGCGAACCAGTTAATATTTTTGGAGGATTTTCACGATAATCGCATAAT
TCAATAACACCATCTGATAAAAGTTGTTCCAAAAAATCAAAAAATCTAATTTTTAAATTT
GGATCTTTGATATCCATATTTAAATAATTTTTATAAACACCAAAAATACCACCTAAATAT
TCACAATATTCTAAAAGATTATATTTTATCTTCACATTCATAACGTAACCTTTATCTAAA
TTTTAATTCTAATCTTTGCCCATGTACTGAATCAGGTTGATTCCTAAACTCAATCGTCCA
TTTTGCTCCAGTTTGTTCTCGGCTAGTTGAAAAATTCCTTAAAATAAAGGAAGAGTTTAA
AGAACTGAAATTTCATAAGAGTAGTAGAACCAACTTGGACTCAAAAAATCTTAAACTCAT
TGTTTTTGAAAAGGTAAAATAATATGACAAGTTATACCATTCCAAAAAAAGATTATCAAT
TTCTGTATATATATGAGGGCACTCTATTAAACTATACTTTGAAAAACGATGAATTCCATA
TCATCGTCCAGAATGTGGATTATCCGGACTTTCCTCAAGAGATTCCTACACCAAATTATA
CAGACTGGGTAAAAATTAAATTCAAGCAGTTCAGCTATCTGAAATTTATCTATGGATACG
CCACGAAGAACCAAGATAAAAATATCAAAAATGTATTGGAACTTGGAGAATTAAAGCAGG
ATGATGAAATCTTGGATTATGGAGGTGCGCTGGAAGTGATAGGCAGTAGGTATGATCTTC
CGACCGGTTTTAGTATAGATATAGTTTGCCGGGAAATAGAGTTAGAATTTTTAGATCAGG
AGAGTTTCAATTAAACGAGCCGTAGCTTGTTATGCTGAGCAGGCAACTTTATCGTATTTC
CTTTTCGGTTGAAACCCCGCCACTCGGACATCTGTCCTTCGGGGCGGTAGAATCAGATTT
TATTTGGGAGGGGCGTAACCCCTTCCGAATCAGGGCAACACATAGGGCGACGCTTTATGT
GTCGTCCTGTGTGTTGAAACATTGATATGCCGATACGGAGCCTGTCGGCAAAATGCCGTC
TGAACAATATGTTTTCAGACGGCATTTTGTATGGGGGTTAACGGTTGTTCAGCCCGAGTA
CGTCCTGCATATCGTACAAAGCCGTTTTGCCGTTGACCCAAACTGCGGCGCGGACGGCAC
CGGCGGCAAAGGTCATGCGGCTGCTGGCCTTGTGGGTGATTTCCACGCGCTCGCCGTCGG
TGGCGAAGAGGGCGGTGTGGTCGCCGACGATGTCGCCTGCGCGGACGGTGGCAAAGCCGA
TGGTCGACGGATCGCGCGGACCGGTGTGGCCTTCGCGGCCGTAAACGGCGCATTGTTTGA
GGTCTCTGCCGAGCGCGCCGGCGATGACTTCGCCCATGCGTAACGCGGTGCCGCTGGGGG
CATCGACTTTGTGGCGGTGGTGGCCTTCAATGATTTCGATGTCGTAGCCTTCGTTTAATA
CGCGTGCGACGGTGTGGAGGATGTGGAAGGTGAGGTTGACGCCGACGCTGAAGTTGGCGG
CGAAAACGATGCCTGTTTTTTCGGCGGCAGTGTGGATAGCGGCTTTGCCCGTATCGTCGA
AGCCTGTTGTGCCGATGATGATGTTGACTTGTTTTTCAACGCATTTTTGCAGGTGTTTGA
GGGTGGGCTCGGGGCGGGTGAAGTCGATGAGTACGTCGCTTTGTGCGAGAACGGCGTCAA
CGTCGTCTGAAATGGCGATGCCGGTTTTGAGTCCGACGGCGTAGCCTGCGTCCAGCCCGA
GGGCTTCTGAGCCTGAGTGTTCAAGCGCACCGGAAAGGACGGTGTCGGGATGGTTGTTGA
CGGCTTCAACCAATACGCGTCCCATAGGGCGGTTTGCGCCGGCGATGGCGATTTTGAGCG
GTGTCATGTGTGTTCCTTATGGTTTGTCTGTGTTTTGGCGGTCTTTGAGGGCTTCGGCAG
CGTTTTGCAGGACGTCGCCTTCGGTGCGGACGAGTACGCCGTTTTCAAAATAGACGGTCA
GATTGCTGCGTTCTTTGATGATGCCGTTGCGGGAGGTGTTGAAGGTATAGTCCCAGCGGT
CGGTATGGAATGCGTCGCGCAGTATGGGGCTGCCGAGCAGGAGCAGGACTTGGTCTTTGG
TCATGCCGGGGCGGAGGGCGGCAACGGCGCGCGGTTCGAGTTCGTTGCCCTGTATGATTT
TGAGTTTGTACGAGGGGAACAGTGAAACGCGTTCGGCACTGCACGCGGCAAGGCCGAGGA
GGGCGGAAAGGGCGAGGATGAGGGTTTTGTTCACGGAAATGCCTTTCTGTGCAAATCGGG
ATGGGTAGTGTAACACTGCTTGAATATTTTATAAAAGCGAACGATAATCATACGATTAAG
CGGTATCCGCCCTGTCCGCGCATCGGCCGCCGGTGCGGTTTTACTATTGCAAACTGCTAT
GGTGCGATAGTGGGCAAACAGGCCGAAATTGCGTATTATAACGTCTATTGTTTTACAGGG
GTATTGAATATTATGGAAAAATTCAACAATATTGCACAACTGAAAGACAGCGGTCTGAAG
GTTACCGGCCCGCGTTTGAAGATTTTGGATTTGTTCGAGACGCATGCGGAAGAGCATTTG
AGTGCGGAAGATGTGTACCGCATTTTGTTGGAAGAGGGTGTGGAAATCGGTGTGGCGACG
ATTTACCGTGTGCTGACCCAGTTTGAGCAGGCGGGCATTTTGCAACGCCATCATTTTGAA
ACGGGCAAGGCGGTTTATGAGTTGGACAAAGGCGACCACCATGACCACATCGTCTGCGTG
AAGTGCGGCGAGGTAACGGAATTCCACAATCCCGAAATCGAAGCCCTGCAAGACAAAATC
GCGGAAGAAAACGGCTACCGCATCGTCGATCACGCGCTTTATATGTACGGCGTGTGCAGC
GACTGTCAGGCCAAGGGCAAACGTTAAATCCGGACGGTTTGTTGTTCAGACGGCATTCAT
GATTTTGGATGCCGCCTGTGTTTTTGGAGAACTGTCATGCGTATTCCGCTGCTTGCCCCT
GACAATTATGCCTTTCCCGATCCTGCCTATGCTTTGGCCCGGTGCGACGGGCTGGTCGGC

GTGAGCGGCGATTTGGATGCGGGGCGGCTGCTTGAGGCGTATCGGAACGGCGTGTTTCCG
TGGTTTTCCCGGGACGGGTGGTTTTTTTGGTATGCGGTCGGGCCCCGTGCGGTGGTGTTT
CCCGACAGGCTGCATATTCCGCGCTCGCTGGCGAAAACGCTGCGCAACGGCAGCTATCGG
GTTGCGGTCAACGGCTGTTTTGCGGAAGTGGTCGCGCATTGTGCGGCAGCGGCGCGCCCG
AATCAGGACGGAACTTGGATTGCGCCCGAGTTTCAGACGGCATATTTGAAGCTGCACGAA
ATGGGGTACGCGCATTCTTTCGAGTGCCATTATCCCGATGAAAGCGGTGAAACGAGGTTG
GCGGGCGGCTTTTACGGCGTTCAGATCGGCAGGGTGTTTTATGGCGAATCGATGTTCGCA
TTACAACCGGATGCGTCGAAAATCGCGTTTGCCTGCGCCGTGCCGTTTTTGGCGGATTTG
GGCGTGGAACTGATAGACTGCCAGCAGGATACGGAACATATGCGCCGTTTCGGTTCGGAG
CTGCTGCCGTTTGCGGATTTTGCCGAACGTCTGCGGATGTTGAACGCCGTGCCGTTGAAA
GAGGAAATCGGGCGGCGCGAAGTGGCGTGCAAGGGGCTTTGATGGCGGCTTATGCTCCGG
TCAGGTTCAAATATGGTGGATTATAGTGGATTAACAAAAATCAGGACAAGGCGACGAAGC
CGCAGACAGTACAAATAGTACGGCAAGGCGAGGCAACGCCGTACTGGTTTTTGTTAATCC
ACTATAAAATTAGAAATGACGACAGCCGGATAAAATCACGGTGAAAATGAAAAATGCCGT
CTGAAACTTGAAAACATCGGGTTTCAGATGGCATTTTGTTTGACGGTTTGTTGCTTATTT
GAGCGGGCGCACTTCAAGTCCGAACATACGGCGTGCGGTGTTCAGCATTTGGCAGCTGAA
GCCCCATTCGTTGTCATACCAAGCGAACACTTTGACCATGTTGCCGTCAACGACTTTGGT
CAGTGTTGCGTCGAAGTGGCTGGCTTCGGTAGTGTGGTTGAAGTCCATGGAAACCAAGGG
CAGGGTGTTGTAGCCCAAAACGCCTTTGAGCGGGCCTGCTTCCGAGGCGGCTTTCATCAG
TGCGTTGATTTCTTCGACTGTGGTGTCGCGCGCGGCTTGGAAGCTCAAATCTACCAATGA
TACGTTGACGGTCGGCACGCGGATGGCAAGCCCGTCGAGCCTGCCTTTCAATTCGGGCAG
TACCAAACCGACGGCTTTTGCCGCGCCGGTTTTGGTCGGAATCATGTTTTCCACGCCGCT
GCGGGCGCGGCGCAGGTCTTTGTGGCGCACGTCGGTAACGGTTTGGTCGTTGGTCAGCGC
GTGGATGGTGGTCATCGCGCCTTTGACGATGCCGACGCTTTCGCTCAACACTTTGGCAAC
CGGCGAGAGGCAGTTGGTGGTGCAGGAAGCGTTGGAAACGACGGTCATGTCGGCGGTCAG
GACGCTGTCGTTCACGCCGTACACGACGGTTGCATCGACATCGTCGCCGCCCGGTGCGGA
AATGAGGACTTTTTTCGCGCCGCTTTCGAGGTGGATTTTGGCTTTTTCTTTGCTGGTGAA
CGCGCCGGTGCATTCCATGACCAAATCGACACCGAGTTCTTTCCACGGCAGTTCGGCAGG
GTTGCGGGTCGAGAAGAAGGGGATTTTGTCGCCGTTGACGATGAGGTTGCCGCCGTCGTG
GGATACGTCGGCTTCAAAGCGTCCGTGCACGGTGTCGAATTTGGTCAGATGGGCGTTGGT
TTCAAGGCTGCCGCTGGCGTTGACGGCGACGATTTGGAGTTGGTCTTGAATCTGATAATC
GTAGATGGCGCGCAAAACCTGGCGGCCGATGCGTCCGTAGCCGTTGATGGCGACTTTGAT
GCCCATGGTTTGTTCCTTTGTTGAGGGTTGGGTAGATTTTCGGGGCGGATTATAGCAAAT
TTGTAGTGGCGTGTAATTAATATTTTATTGAAAACGGCGCGGCCGGAAGGGTGGGCGGTA
AGATGCGGACGGCACGGGTGCGGCGGACGGAGAGCTTGATAAAATGCCGTCTGAAGCGGC
TTCAGACGGCATATCAGGGAAGGGTCAGGAGGCGGTATTCTGTGCGGCTTCCTGTTTGGC
TTTGTATTGTTTGAGATATTCGAGGGCGGCGGCTTTTTCGCTGTCGCTGCCGTATTTCAT
ATCGCGTTGGGCGCGGCGCAACTCGGCGCGTTCGCGGGCTTCGGCTATCTGTTTCGCCTG
ATAGTCTTTGCGGTTGTCGGCGGCGGCGAGGCGGTCTTGTTGGGTTTGCGCTTTTGCCAT
GGCTTTGGCGATGAGGTCGGCAGGGTTAAACGTCGGTTTTTTCGGTGTGTCGGGCGTTTG
CGGACGCGCGTTGCGGACGGCGGCTTCGCGTTCGGCAAGCATGGCCTTGCGTTCGTCGGC
TTCGCGCTGTTTGCGTTCGTTGCGTTTGAGGTAGCGCGTGCGCGCGTGTTCGGCGGCGGC
AAAACGGCTGTCGGCGGACAGGCTGAAGCGGCGCGCGCGGGGCAGGACGGTGTCGGCAAC
GGGCTGCATATGGATGCAGTCGACGGGGCAGGGGGCGACGCAGAGTCCGCAGCCGGTGCA
TTCGTCGGCGATGACGGTGTGCATAAGTTTGCCCGCGCCCCATAATGGCATCGGCAGGGCA
GGCGCGGATGCAGGCGGTGCAGCCGATACAGGCGGTTTCGTCTATCCGGGCGAGTGCTTT
GGCTTGGGTTTTGGCAGGTGCGACAAAGGGTTTGCCGAGCAGGGCGGAAATGTCCCGAAT
GACGGTTTCTCCGCCCCGGGGCGCAGAGGTTGTACGCTTCGCCTGTTGCGACTGCCTGTGC
GTAGGGCAGGCAGCCGTCGTAGCCGCATTCGCGGCATTGGGTTTGGGGAAGCAGGCGGTC
TATGGCGGCGGCTGTGGCGGTCATGTCGGTGTGCGGCTCAAAATCGAAAGGGCGTATTTT
AGCAGAATTGTATGCCGCGCCCGTTTCGGATGGTGCGCGGTGTTTTGTTATAATGCGGCG
GCGTATGCCGTTTCAGACGGCATTTTTCTGTATTTTCCTGTTCGGACGGTCTATGAACGA
ATTTTCGCTTGCCCCTATTGTGATTGTTTTGCTGGTGTCGGTCATTACGGTGATCCTGTG
CCGCAAGTTCAACATTCCCTCCATGCTGGGCTACCTGCTGGTGGGCTTTTTGGCGGGGCC
CGGTATGCTCAGCCTGATTCCGAAAAGCCATGCGACGGATTATTTGGGCGAAATCGGGAT
TGTGTTCCTGATGTTCAGCATCGGTTTGGAGTTCTCGCTGCCCAAGTTGAGGGCGATGAG
GCGGCTGGTGTTCGGTCTGGGCGGTTTGCAGGTCGGCATTACGATGCTGTCGGTAATGGG
CATACTGATGCTGACGGGCGTGCCGTTCAATTGGGCGTTTGCCGTGTCGGGCGCGTTGGC
GATGTCGTCCACGGCGATTGTGAGCCGGATTTTGTCGGAAAAGACGGAATTGGGGCAGCC
GCACGGTCAGATGGCGATGGGCGTGCTGCTGATGCAGGACATCGCCGTCGTGCCGCTGAT
GATTCTGATTCCCGCGCTGGCGGGCGGAGGGGACGGAAATATTTGGGCGGCCTTGGGTTT
GGCGTTTGCAAAAATGCTGCTGACGCTGGGGCTGCTGTTTTTCGTCGGCAGCAAAATTAT
GTCGCGATGGTTCAGGATGGTGGCAAAACGCAAATCGTCCGAACTCTTTATGATCAATGT
GCTGCTGGTAACCTTGGGTGTGGCTTATCTGACTGAGCTGGAAGGTTTGTCTATGGCGTT
GGGCGCATTCGTTGCCGGCATGCTGCTTTCGGAAACGGAATACCGTTTCCAAGTCGAAGA
CGACATCCGCCCGTTCCGCGATATTTGCTCGGCTTTTTCTTTATCACGGTCGGCATGAA
GCTGGACATTCAGGCATTGATCGGCGGCTGGCGGCAGGTATTGATGCTGTTGGCAATGCT
GCTGGTGTTGAAGGCACTGGTTGTGTTTGCCATTGCCTTCAAAATGAAACATTCGGTCGG
CGACAGCCTCAAAACGGCTTTGTATCTCGCGCAGGGCGGCGAGTTCGGCTTCGTGATGCT
GGCCATTGCCGGGCAGCTTGATATGGTTTCGCCAGAATGGGAACAGGCGGCGACGGCGGC
GGTTCTGCTGTCGATGATTATCGCGCCCTTCCTCTTGGGCGGCAGCGATGCGCTGGTCGG
GCGTTTGGTCAAGTCAAGCTGGGACATGAAGTCGCTCGATCTGCACAGTATGCTGGTAGA
AACCATGAGCAAGTCCGACCATGTGCTGATTGTCGGCTTCGGCAGGGGCGGGCAGACGGT
CGGACGCGTCCTTGCCCAAGAGGATATTCCGTATTTCGCGCTCGACTTGGACATTGCGCG
GGTGCAGGTTGCCAGAAGTGCGGGCGAACCGGTGTCGTTCGGCGATGCGAAACGCAGGGA

AGTATTGGAAGCCGCCGGTCTGGGACGGGCGAAAATGGTGGTGGTTACGCTCAACAATAT
GCACGAAACGCAACACGTTTTAGACAATGTGCTGTCCATGTATCCCAATATGCCCGTATA
TGTGCGCGCCACCAACGACGATTATGTGAAAACGTTTACCGATATAGGTGCGGAAGAAGC
CGTGTCGGACACCAAAGAAACCGGACTCGTGCTGGCAGGCTATGCAATGTTAGGCAACGG
CGCGTCGTATCGGCACGTCTATCAGACGATGGCAAATATCCGCCACAGCCGTTATGCCGC
GTTGGAGGGACTGTTTGTCGGTAGTGATGATGAGGCAGGATTCGGCGAAAACGGCGAAAC
CGTCCGTCACGCCTTTCCTTTGGCTGCAGAAGCATACGCCGTCGGCAAAACAGTCGGCAC
GCTTCCGATGGCGGCTTACGGCATCAAACTCTTGTTCGTCCGCCGCCGCACCGGCCGGAT
TGAAAACCCGGATGCCTCGTTTACATTGGAAGGCGGTGACGTGTTGGTGGTCGCAGGCAA
AAAAGAAGAAATTATCTCTTTTGAAAACTGGAGTTTGCAGGGAATATAAATGAAATGCCG
AAATAAGGCTTGCGCCATTTCCGGTTATTTGGTTTAATAACGCTTTCGCAAATCGCAAGG
GTGATTAGCTCAGTTGGTAGAGTGTCTGCCTTACAAGCAGAATGTCGGCGGTTCGACTCC
GTCATCACCCACCAAGTTTTCTTTCATTGTTGCAAACAATGGATGCGCGGTGGTAGCTCA
GTTGGTTAGAGTACCGGCCTGTCACGCCGGGGGTCGCGGGTTCGAGCCCCGTCCGCCGCG
CCAAGTTTCAAAATACTGACTCTGTCGGTATTTTTTATACACGGGTGATTAGCTCAGTTG
GTAGAGCGTCTGCCTTACAAGCAGAATGTCGGCGGTTCGACTCCGTCATCACCCACCAAG
TTTTCTTTCATTGTTGCAAACAATGGATGCGCCGTGGTAGCTCAGTTCGTTAGAGTACCG
GCCTGTCACGCCGGGGGTCGCGGGTTCGAGCCCCGTCCGCCGCGCCAAAAGTTAAGGAAT
ACCAACCTCCGGTTGGTATTTTTTTGTTTGTATGCTTTGAAAAATGTTTGTTTCCGGATT
TTGCCATTCCCATCCGGTTTTGCGCTGTACGATGTGTTTTAGCGCGGACTTGCTCAAAAT
CGCATGTGATTCCGGTATTTGAGGCTTTGATTAGGGATGCGGACTTTCAATATATTTTCT
CAGCTACAACAACGAAGCCTTGATGTCTGTCGCGCAGGTAAGGGAGATTTTTGAGCGTTT
CGGCAAATATAATTTGGTTCAAACGGAATACCGGCGTTTTAAGGCAGATAAGACAGAAAA
CCGTAATCATAAGGCAAATTCGATATTCGAATTTCTGCATATTTTAGAAAAGACCTTTTA
TAGTGGATTAACAAAAACCAGTACAGCGTTGCCTCGCCTTAGCTCAAAGAGAACGATTCT
CTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATTTGTACTGTCTGCGGCTTCG
TCGCCTTGTCCTGATTTTTGTTAATCCACTATAAAAATTCTTGCCGGATGCTGCAAACAA
CGCCGGTTTGCATTCCTGATGGCGGTGGTTTTCTTAGACGAACGCCCGAACACGCAGGAA
TGGATAGGCTTGGGGCTGGTTACGGCGGGCGTGTTGACGCTGGCACTGAAACGGTAAAGC
CGCAAGAAATAAATGAAATGCCGTCTAAAAAACTGTTTTCAGACGGCATTTTCGTTTCTG
TCCATCCTCAGCACTCGACCACGCGCACGGATACGGGGACGGCTTTTTTCCGGAGCGTGG
CGGCGAGTCCGGCAAGCGAGGTTTCTTTGTAGGTCGCCTTCATATCCCGGCCGGTTTGCA
GCATGGTTCGGATGACTTCGTCGAGCGAGACTTTTTTGTCCGTGCCGTCTTCCAAAAGCG
CGAGCGTGCCGAGTTTGAGGGCTTTTTCGGCGGCGATGCCGTTGCGCTCGATGCAGGGGA
TTTGCACCAGTCCGCCGACGGGGTCGCAAGTCAGCCCCAAATGGTGTTCCATCGCCATTT
CGGCGGCGTTTTCCACTTGTTTGGGCGTGCCGCCGATGACTTCGGCGTATGCGCCCGCCG
CCATCGAACACGCTACGCCGACTTCGCCCTGACAGCCGACATCCGCACCGGAAATGGAGG
CGTTGGTCTTGTAGAGGATGCCGATTGCGCCTGCGGTGAGCAGGAAGTTTTCGACGCGTT
CCTGTGTGGCGTGCGGATTGAACTTGCGGAAATAGTGCAATACGGCGGGAATGATGCCTG
CCGCGCCGTTGGTCGGTGCGGTAACGACGCGTCCGCCGGCGGCGTTTTCTTCGTTGACCG
CCATGGCGTACACCATCGGCCAGAGCTGGGTGTTGACGATTTCGGTTTCGCGCAGGACTT
TGAGCTTGGCGGCAAGCTGCGGGGCGCGGCGCCGGACGTTCAATCCGCTGGGCAGTTCGC
CGTCCGCACCCAAGCCGCGTTTGATGCAGCCTTCCATAACCTCGGCAACGGCAGCGGCGC
GGCGGCGGATTTCGGCTTCGCCGCATCCGGCAAGCGCGGCTTCGTTTGCCAACACGACTT
CGGAGATGTCGAGCCGGTTCAGACGGCATCGGGCAAGCAGTTCGGCGCAACTGGTATAGG
GATAGGGAACGGCTTTTTCCGTTTCCGCCTGCCGGTCAAAATCTTCTTCGGTAACGACAA
AGCCGCCGCCGACCGAATAATAAACCTGTTCATTCAATACCGTGCCGTCTGAAGCATAGG
CGGTAAAACGCAGGCTGTTGGGGTGTTTGGGCAGCACTTGATTGCCGAGTATGTTCAGGT
CGCGGTCGGGGATGAAGCGGATTTCTTGCCCGTTGAGCCGGAGGATGTGCTGCGTGCGGA
TGCGTTCGAGGCGTTCGGGAATGCCGGCAAGCGGGATGTCGTGCGGCAGGCTGCCTTCCA
AACCGAGCATCAGCGCGTCAAATGTACCGTGTCCGTATCCGGTCAGTGCGAGCGAGCCGT
AAATGTCGATGACGATGCGAACAGCCTGTGCATCCAAACCTGCCGCAAAGGCGGCGGCTG
CCTTCATCGGGCCGACCGTATGCGAACTGGAAGGCCCGATACCGATTTTGAAAATATCGA
AAATGCTGATCATATTTTGCTCCGACGGTTTTCAGACGGCACAGGTTCCGTTTGACCAA
CCAAAAAGGAGACGCGGCACGATGCCCGTCTCCTTTTTTAAAACGGCACTTATGCGTCGA
TATTTTGGGCAATCAGCGCGTTGTTTTCGATAAAGGCACGGCGCGGCTCGACCTCGTCGC
CCATCAGCGTAACGAACACTTCGTCGCCGGCAATGGCATCTTCGATGCGCACTTTCAACA
GGCGGCGCACGGCGGATCCATCGTGGTTTCCCACAGCTGCTCGGGGTTCATCTCGCCCA
AGCCTTTGTATCGTTGGATGGACATACCTTTTTGGGCAACGCTCATCAAGATGTCCAAAG
CGGTTTCAAAGCTGTCCGCGTCGTACCCGTTTTCGCCTTTGTAAAGCTTGGCACCCTCGC
CGACCATGCCTTTGAGCGCGGCGGCGGTTTGGGTGAGGGTTTGGTAGGCTTTGCTGTTGA
GGAACTTGGGTTCGATGTAGCTGACCATGACGTTGCCGTGCAGCTTGCGCGTGATTTTGA
TGAACCGGTGTCCTTCATGACCTTCGATGCGTTCGAGGGCGACTTCTTTTTCGTCAAGCA
GACCGGAAAGTTCGGCAACGGCTTTATCGGCGTTTTCAGACGACGTCAAATCAATGGGCG
ACGCGTGTAGCATGGCGCGCAGGACGAGTTCGTCTACGAAGCGGCTTTCCTGTTCGATGA
CGGTTTTTGCCAACAGGAATTGTTTGGCGGTGTCGGCAAGTTCTGCGCCTTCGATGGTGC
GGCCGTCTGAAATGATTTTGGCTTTTTCCAAGGCAAGACCGAGCAGCCATTGGTCTTTTT
CCAACTCGTCCTTGAGGTAACGTTCCTGTTTGCCGTATTTCGCTTTATACAAAGGCGGCT
GGGCGATATAGATGTAGCCGCGCTCGACCAGCTCGGGCATTTGGCGGTAGAAGAAGGTCA
GGAGCAGGGTGCGGATGTGCGCGCCGTCCACGTCGGCATCGGTCATGATGATGATGCGGT
GGTAACGCAGTTTTTCGGCATTGAATTCTTCTTTGCCGATGCCCGCGCCCAAAGCGGTAA
TCAGCGTGGCGACTTCTTGGCTGGCCAGCATTTTTTCAAAACGTGCTTTTTCGACGTTCA
AAATTTTACCTTTGAGCGGCAAAATCCCTTGGAATTTGCGGTCGCGGCCTTGCATGGCGG
AACCGCCTGCGGAGTCGCCCTCGACGAGGTAGAGTTCGGACAGGGCAGGGTCTTTTTCTT
GGCAGTCGGCGAGTTTGCCGGGCAGTCCCAAGCCGTCCATCACGCCTTTGCGGCGGGTGA

TTTCGCGTGCTTTGCGGGCGGCTTCGCGCGCGCGGGCGGCATCGACGATTTTGCCGGTGA
TGATTTTGGCTTCGTTCGGATTTTCTTCGAGGAAGTCGGTCAGGGCTTGGCTGATGACTT
CGTTGACAACGGGGCCGATTTCGCCGGAAACCAGTTTGTCTTTGGTTTGGGACGAGAATT
TGGGGTCGGGCAGTTTGACGGACAACACGCAGGTCAAACCCTCGCGCATATCGTCGCCTG
CGGTTTCCACTTTGGCTTTTTTGGCGACTTCGTTGGCTTCGATATAGTTGTTGATGGTGC
GGGTCATCACTTGGCGCAGTGCGGTCAGGTGAGTACCGCCATCACGTTGCGGGATGTTGT
TGGTGAAACACTGCACGCTTTCTTGATAGCTGTCATTCCATTGCATCGCGCATTCGACGC
TCATGCCGTCTTTTTCGCCGAACGCGTAGAAGATTTTTTCGTGCAACGGCGTTTTTTTGC
GGTTCATGTATTGCACGAAACCCGCCACGCCGCCGGAAAGGGCGAAGCTTTCGTGTTTGC
CGTCGCGCTCGTCGGTCAATTCGATGTCCACGCCGTTGTTCAGGAAGGAAAGTTCGCGGA
TGCGTTTGGCAAGGATGTCGAAGCTGTATTCGACGTTGCCGAAGGTTTCCGTACTGGCGA
GGAAGCGCACGGTCGTGCCTTTTTTATCGGAATCGCCGACAATTTTCAGCGGCTCTTCGG
TTTCGCCGCGCACGAAGCGGACGAAGTGTTCTTTGCCGTCGCGGTAGATGGTCAGCGTTA
CCCAGTCGGACAGCGCGTTGACGACGGACACGCCCACGCCGTGCAGGCCGCCGGAGATTT
TGTAGCTGTTGTTGTCGAATTTACCGCCCGCGTGCAATACGGTCATGATGACTTCGGCGG
CGGAGCGTCCTTCTTTCGGGTGGATGCCGGTGGGCATACCGCGCCCGTTGTCGGCGACGC
TGACGGAATGGTCGGCGTGTATCGTTACCGTGATTTTGTCGCAATGTCCGGCGAGTGCTT
CGTCAATGGCGTTGTCCAATACTTCGAACACCATGTGGTGCAGACCGCTGCCGTCCTGCG
TGTCGCCGATGTACATGCCGGGGCGTTTGCGTACCGCTTCCAAGCCTTCGAGCACCTGAA
TGCTGTCGGCGCCGTATTCTTCGTGTTTTTGTTCAGTCATATTTTTTGCCGGATTTTGAA
AAGATTTTGCGATGCCGCCAAAACAAGTCCGCACCTTGTAGAAAAAGCGGGCGGGACGAC
ATATATAATTGTGTATTATAGCCGATTTTGCCGCCTAATTCAGCGTTATCCGCATCAGTG
TGCCGCCGGGAAAAGATGAAACGGTACGTTTGCCTCCGGCATCAGGTCGGGGATTGTCCC
GTAAAGTGGCAAAAGCGTTTTTTTGCCACTAAAATCTACACCCTATACTTTTCGGACAGG
GGCGCGGAAATGGAAATATGGAATATGTTGGACACTTGGCTCGGTGCCGTCCCGATACGT
GCGGAGGCGGTCGAATCCGTGGCGGCGGTTGCGGCTTTGCTGCTGGCGCGCGCCCTTCTG
TTGAATATCCACTTCAAACGGCATCCGGATTTCGGCATCGAAAGCAAGCGGCGGTTTTTG
GTTGCCAGCCGCAATATAACGCTGCTTTTGGTGCTGTTTTCGCTGGCATTTATCTGGTCG
GCGCAAATCCAAACGCTGGCTTTGTCGATGTTTGCGGTGGCGGCGGCGGTCGTCGTGGCG
ACGAAGGAACTGATTATGTGTCTGTCGGGCAGTATTTTAAGGTCTGCCACCCAGCAATAC
TCGGTCGGCGACTATATCGAAATCAACGGCCTGCGCGGGCGCGTGGTCGACATCAACCTG
TTGAACACGCTGATGATGCAGGTCGGTCCGAACCCCTTGGTCGGACAGCTTGCGGGAACC
ACCGTTTCTTTCCCCAACAGCCTGTTGTTGAGCCACCCCGTGCGCCGCGACAATATTTTG
GGCGACTATGTCATCCATACGGTCGAAATCCCCGTTCCCATCCATTTGGATTCGGATGAA
GCCGTATGCCGTCTGAAAGCCGTACTCGAGCCCTTGTGCGCGCCCTACATCCCCGCCATC
CAACGGCATTTGGAAAACGTGCAGGCGGAAAAACTGTTTATCACGCCCGCCGCCAGACCG
CGCGTTACCCGCGTGCCGTACGATGACAAGGCATACCGCATCATCGTCCGCTTCGCTTCC
CCCGTTTCAAAGCGGCTGGAAATCCAACAGGCGGTTATGGACGAATTTTTGCGCGTACAA
TACCGCCTGTTAAATCACCCCGCCGGCTCCGAAACACTTTAACTTTCCCCGACCGACCCC
ATTTCCGGCTTCAGACGGCATATTGCCGATATGCTGTCTGAAACACAACACGCAAAGGAA
ACCCATCTTATGACTGACAACGCACTGCTCCATTTGGGCGAAGAACCCCGTTTTGATCAA
ATCAAAACCGAAGACATCAAACCCGCCCTGCAAACCGCCATCGCCGAAGCGCGCGAACAA
ATCGCCGCCATCAAAGCCCAAACGCACACCGGCTGGGCAAACACTGTCGAACCCCTGACC
GGCATCACCGAACGCGTCGGCAGGATTTGGGGCGTGGTGTCGCACCTCAACTCCGTCGCC
GACACGCCCGAACTGCGCGCCGTCTATAACGAACTGATGCCCGAAATCACCGTCTTCTTC
ACCGAAATCGGACAAGACATCGAGCTGTACAACCGCTTCAAAACCATCAAAAATTCCCCC
GAATTCGACACCCTCTCCCCCGCACAAAAAACCAAACTCAACCACGATCTGCGCGATTTC
GTCCTCAGCGGCGCGGAACTGCCGCCCGAACAGCAGGCAGAACTGGCAAAACTGCAAACC
GAAGGCGCGCAACTTTCCGCCAAATTCTCCCAAAACGTCCTAGACGCGACCGACGCGTTC
GGCATTTACTTTGACGATGCCGCACCGCTTGCCGGCATTCCCGAAGACGCGCTCGCCATG
TTTGCCGCCGCCGCGCAAAGCGAAAGCAAAACAGGCTACAAAATCGGCTTGCAGATTCCA
CACTACCTCGCCGTCATCCAATACGCCGACAACCGCGAACTGCGCGAACAAATCTACCGC
GCCTACGTTACCCGCGCCAGCGAACTTTCAGACGACGGCAAATTCGACAACACCGCCAAC
ATCGACCGCACGCTCGCAAACGCCCTGCAAACCGCCAAACTGCTCGGCTTCAAAAACTAC
GCCGAATTGTCGCTGGCAACCAAAATGGCGGACACGCCCGAACAAGTTTTAAACTTCCTC
CACGACCTCGCCCGCCGCGCCAAACCCTACGCCGAAAAAGACCTCGCCGAAGTCAAAGCC
TTCGCCCGCGAAAGCCTGAACCTCGCCGATTTGCAACCGTGGGACTTGGGCTACGCCAGC
GAAAAACTGCGCGAAGCCAAATACGCGTTCAGCGAAACCGAAGTCAAAAAATACTTCCCC
GTCGGCAAAGTATTAAACGGACTGTTCGCCCAAATCAAAAAACTCTACGGCATCGGATTT
ACCGAAAAAACCGTCCCCGTCTGGCACAAAGACGTGCGCTATTTTGAATTGCAACAAAAC
GGCGAAACCATAGGCGGCGTTTATATGGATTTGTACGCACGCGAAGGCAAACGCGGCGGC
GCGTGGATGAACGACTACAAAGGCCGCCGCCGTTTTTCAGACGGCACGCTGCAACTGCCC
ACCGCCTACCTCGTCTGCAACTTCGCCCCACCCGTCGGCGGCAGGGAAGCCCGCCTGAGC
CACGACGAAATCCTCATCCTCTTCCACGAAACCGGACACGGGCTGCACCACCTGCTTACC
CAAGTGGACGAACTGGGCGTATCCGGCATCAACGGCGTAGAATGGGACGCGGTCGAACTG
CCCAGCCAGTTTATGGAAAATTTCGTTTGGGAATACAATGTCTTGGCACAAATGTCAGCC
CACGAAGAAACCGGCGTTCCCCTGCCGAAAGAACTCTTCGACAAAATGCTCGCCGCCAAA
AACTTCCAACGCGGCATGTTCCTCGTCCGGCAAATGGAGTTCGCCCTCTTTGATATGATG
ATTTACAGCGAAGACGACGAAGGCCGTCTGAAAAACTGGCAACAGGTTTTAGACAGCGTG
CGCAAAAAAGTCGCCGTCATCCAGCCGCCCGAATACAACCGCTTCGCCTTGAGCTTCGGC
CACATCTTCGCAGGCGGCTATTCCGCAGGCTATTACAGCTACGCGTGGGCGGAAGTATTG
AGCGCGGACGCATACGCCGCCTTTGAAGAAAGCGACGATGTCGCCGCCACAGGCAAACGC
TTTTGGCAGGAAATCCTCGCCGTCGGCGGATCGCGCAGCGCGGCAGAATCCTTCAAAGCC
TTCCGCGGCCGCGAACCGAGCATAGACGCACTCTTGCGCCACAGCGGTTTCGACAACGCG
GTCTGACGGCAGGGTTGAAGTAAAAAATATGGCGGATTCGATAGAAAAACATCCGCACCG

TCATTCCCGCGCAGGCGGGAATCCAGACCGGTCGGTGCAGAAACTTATCGGGAAAAACGG
TTTCTTTAGATTTTACGTTCTAGATTCCCACTTTCGTGGGAATGACGCGGAAAAGTTGCT
GTGATTCCGGATAAATTTTCGCAACGTTTAATTTCCGTTTTACCCGATAAATGCCCGCAA
TCTCAAATCCCGTCATTCCCCAAAAACAAAAAAATCAAAAACAGAAATCCCATCATTCCC
GCGCAGGCGGGAATCCAGGTCTGTCGGTGCGGAAACTTATCGGATAAAACGGTTTCTTTA
GATTTTACGTTCTAGATTCCCGCTTTCGCGGGAATGACGGAATATTTTTGAATTTGATAA
AAATGCCGTCTGAAACGGTCAAACAACGCTTCAGACGGCATTTTATAGTGGATTAACAAA
AATCAGGACAAGGCGACGAAGCCGCAGACAGTACAAATAGTACGGAACCGATTCACTTGG
TGCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCCAAGGCGAGGCAACGACGTACTGGT
TTTTGTTAATCCACTATATTTTCCGACATCATTGAATCAAACCCAAATGCGACAAGAGCG
TCCATGTGCCGATGGCAATCAACACCAAACCTCCGGCAAATTCCGCACACCTGCCGAACA
ATACGCCCAAAGCCCTTCCCGCCGTCAGCCCGACCGCCACCATCACCGTCGTCGCCATAC
CGATGATTGCGGCGGCAAAGGCGATGTTTACCTCCATAAACGCCAAGCCCACCCCGACTA
TCATGGAATCAATACTGGTTCCAAAAGCAGTCAAAACCGTCATCCATAGGCTTTCCCGTT
TGCTTTCGCGCACATCTTCCGCCTCGCCGGACAGCCCTTCGCGCATCATTTTCAGACCCA
GCCCGCCCAGCAGGACGAAAGCCACCCAATGGTCCCATTCGCTGATAAACGGCTTGGCAT
AAAAACCGCCTACCCAGCCTGCCAGCGGCGTGAGCGCTTCAACCGTGCCGAACACCAAAG
CCGTTGCCGCAATTTTGCGCGGAGGCATTCTGACCGCCGCACCCTTTGCCAATGCGACGG
CAAACGCATCCATCGACATCCCCAGAGCAATCAAGAGCAAAGCATAAAAACCCATACCGC
ACCCGTCCTCAAAAAGGGCGGATTATAGCAAAAGCAAAAAAATGCAAAAATGCCGCACGA
AAACCCGCATCCCGTCATTCCCGCAAAAACAAAAAATCAAAAACAGAAATCCCGTCATTC
CCGCGCAGGCGGGAATCCAGAGTTGTCGGTGCGGAAACTTATCGGATAAAACGGTTTCTC
CAACCCCGAGTCCTTGATTCCCACTTTCGTGGGAATGACGGGATATTTTGCGTTTAATAA
AAAACGCCCGCTGAAACGGCGGGGCGGGATGGGGGAATGCCGTCTGAAACGGTCGGACAA
TGTTTCAGACGGCATTTTTATGCCCGGTTATTTCCGATAGCGGACGGCGCGGGACAGGAT
TTCTTCAATTTCCATCCACATAATGCCCCCTTACAGCAAACCAGCCTGACCCAGTGCGGG
ATCGGTCGCGCGGGCGGCTTGGGCATCTTCGACAGTCAGTCCAAGGGCTTTGGCCACGCC
TTCGCCGTATGCCGGGTCGCAACGGTAGCAGTTGCGGATATGGCGGTATTTGATGAAGTC
GGGCGCGTCGCCCATTGCGGCGGCGGTGTTGCCGAACAATGCCTGTTTCTGCGCGTCGTT
CATCAGGTTGAACAGGGCGCGCGGTTGGCTGAAATAGTCGTCATCGTCTTGGCGGTAGTC
CCAGTGTGCCGCGTCGCCGTTGATTTTCAAAGGCGGTTCGGCGAAGTCGGGTTGTTGCTG
CCATTGGCCGAAGCTGTTGGGTTCGTAGTGCGGCAGGCTGCCGTAGTTGCCGTCGGCGCG
GCCTTGCCCGTCGCGCTGGTTGCTGTGAACAGGGCAACGCGGACGATTGACGGGAATTTG
GCGGAAGTTTACGCCCAAACGGTAGCGTTGTGCGTCGGCGTAATTGAACAAACGCGCTTG
CAGCATTTTATCTGGGCTGGCGCCGACACCGGGAACGAGGTTGCTCGGTGCGAAGGCGGA
TTGTTCCACATCGGCGAAGAAGTTTTCGGGATTGCGGTTCAACTCGAATTCGCCCACTTC
AATCAGCGGATAGTCTTTTTTCGGCCAAACTTTGGTCAAGTCAAACGGATGATAAGGTAC
TTTTTCCGCGTCTGCTTCAGGCATGACTTGGATGTACATCGTCCATTTCGGAAACTCGCC
GCGTTCGATGGCTTCGTATAAGTCGCGCTGATGGCTTTCGCGGTCGTCGGCGATGATTTT
GGCGGCTTCTTCGTTGGTCAGGTTTTTAATGCCTTGTTGGGTGCGGAAATGGAATTTCAC
CCAAAAACGCTCGCCTGCTTCGTTCCAGAAGCTGTAGGTATGCGAACCGAAGCCGTGCAT
ATGGCGGTAGCCGGCGGGGATGCCGCGGTCGCTCATCACGATGGTAACTTGGTGCAGTGC
TTCGGGCAGCAGCGTCCAGAAGTCCCAGTTGTTTGTGGCAGAGCGCATATTGGTGCGCGG
GTCGCGTTTGACGGCTTTGTTCAGGTCGGGGAACTTACGCGGGTCGCGCAGGAAGAACAC
GGGCGTGTTGTTGCCGACCACATCCCAGTTGCCTTCTTCGGTATAAAATTTCAAGGCAAA
ACCGCGGATGTCGCGTTCTGCATCGGCTGCGCCGCGTTCGCCTGCCACGGTGGTGAAACG
GGCGAACATCTCGGTTTTTTTGCCGACTTCGCTGAAGATTTTGGCGCGGGTGTATTTGGT
GATGTCGTGCGTTACGGTAAACGTACCGAACGCGCCCGAACCTTTGGCGTGCATACGGCG
TTCGGGGATGACTTCGCGCACGAAGTCGGCGAGTTTTTCATTCAGCCACAAATCCTGCGC
CAGCAGAGGGCCGCGAGGACCGGCGGTCAGGCTGTTTTGATTGTCGGCAACAGGCGCGCC
GTTGTTCATGGTCAGATGGGTTACAGGGCATTTGGAGGTAGTCATCGCTCTTGTTCCTTT
TCTCAGGTTGGTCAAATGGGGGTAAACGGCTTACAGTACGATTTGGCGGAAAGCGTATTC
GTAACCGGTTTCTTGATTGCAATAAATTTCTTGAATCGACATTTTATTTCCCTTTTGTAA
AAACTATGGATGCGACTATACGCCAAGATTTTCGCTATTAAAACTATGAAATCGATTTAA
TATTATTATAAGCAATCGGTTCTTGATTTTCGTTTGTTTTTTGTTATCGAACGGAATCCG
AACCCGCTCATTAAAACCATTTATAATGCAATGACGCTTTGCGGCATTTTTTGCGCCGAC
AGGCTGAAAATAACAATTTTCCCCACATTATCATGACCTTACTCGGAATAAAGCTCAAAC
AGACCCAGCAGCTCAACCAGCGGCTGCAACAATCTTTGCGCGTATTGCAGATGTCGGGTA
TCGAACTTGAACGCGAGGTCGAAAACTGGCTGTCGGACAACCCCCTGCTCGAACGCAAAG
ACACGGATGAATTTTCCGATGCCGAGTTCAGCCATTACACTGCGCCTGCCCGTCAAATCG
GCGGAGACGAAGGCGAAGATATGCTGTCCAACATCGCCGGCGAGCAGGATTTCAAGCAAT
ACCTGCACGCGCAAGTATGCGAACACCCGCTTTCCGACCAAGAAGCCGCCTGTGTCCACA
TCCTTATCGATTTCCTTGACGAGCAGGGTTATCTGACCGACAGCATCGAAGACATCCTCG
ACCATACGCCCTTAGAGTGGATGTTGGATGAAGCAATGCTGCAACACGCGCTGACCGCAT
TGAAAAAATTCGACCCGGCAGGCGTGGCCGCCGCCGATTTGAACGAATCGCTGATACTGC
AGATAGAAAGATTGGGCGAATGTGCTGCCAAACCCGCCGCCCTGCATATCGTCCGAAACG
CCCTCGACAGCATTGACGGCAACCGCAGCCAAACCCTCGCACGAATAAAAAAACACCTGC
CCCAAACCGACAGCGGCACACTCGAAGCCGCACTCGACCTCATTGCTTCGCTCAATCCCT
TTCCCGCCGCCGGTTTTGCCTCGTCCACGCCCACGCCGTATTCTGACGAGGCGCTCGCCA
ACCTGCTGGCTTTCCGCGGCATGGAGGTTTCTCGCCGCACCATTGCCAAATACAGAGAAT
CCTTTGAGATTCCGGCAGCACACAAACGCAAAACCGCAGAATAATTGCCGAATAATCTTA
TAAAGACAACAAACCAAAAGCCGGCATTTCTGCGAAAGCGGGAATGCCGAATCCGTCCGC
GCGGAAACCTGCATCCCGTCATTCCCGCGAAAGAGGGAATCTAGAAACGCAAAGCTGCAA
GAGTTTATCGGAAATGACCGAAACTCAACGAACCTGGATTCCCGCTTTCGCGGGAATGAC
GGGGGTTTGGCGGGAATGACGAGGGTTTGGGATTTCTGTTTTTGAATTTCTGTTTTTGTG

AGAATGGCAAGATTTTCGGTTCTTGTATGGATAACGAGATTTTAGATGGCGGGAATTTGT
CGGGAAAACAGCAATCTGAGACCTTTGCAAAAATAATCTGTTAACGAAATTTGACGCATA
AAAATGCGCCAAAAAATTTTCAATTGCCTAAAACCTTCCTAATATTGAGCAAAAAGTAGG
AGAAATCAGAAAAGTTTTGCATTTTGAAAATGAGATTGAGCATAAAATTTTAGTAACCTA
TGTTATTGCAAAGGTCTCAATCTTTACCGTCATTCCCACGAAAGTGGGAATCTAGAAACG
CAAAGTTGCAAGAATTTATCGGAAATGACCGAAACTCAACGAACCTGGATTCCCGCTTTC
GCGGGAATGACGAGGGTTTGGGATTTCTGTTTTTGAATTTCTGTTTTTGTGAGAATGGCA
AGATTTTCGGTTCTTGTATGGATAACGAGATTTTAGATGGCGGGAATTTGTCAGGAAAAC
AGCAACCCTCCGCCGTCATTCCCACGAAAGTGGGAATCTAGAAACGCAAAGTTGCAAGAA
TTTATCGGAAATGACCGAAACTAAACGAACCTGAATTCCCGCTTTCGAGGGAATGACGGG
GGTGTGGCGGGAATGACGGGGGTTTATCAGAAATGACCGAAACTCAAAAGCGGGCAGCCT
TGTTTACGCCTTCAAAATATCGAGCAATTTCAAATCGACTTTTTCGGCATCGAATTTATC
TTTGGCAATCGCATAACTTGCATTCCCCATCAGGCGGACGGCTTCCCTGTTTTCGATAAA
ATAAATCATTTTTTCGGCCAAGATGCGGGGATTCCAAGGCTCGATCAGGAAGCCGTTGAC
CTTGTCGGCGACCGTTTCCCTGCATCCGGGGACATCCGTCGTAATCACTGCCCTGCCGAC
GGCCATTGCCTCCTGAGTGCTTCGGGGAACGCCTTCCCTATAATAAGACGGCAATACGAA
TATATGATGTTCTTTTATCACTTCGGAAACATTGTTCACAAAACCGGGGAAACGGATAAT
ATCGCGGGCGGCAAGCCGTTCCAAATCGCCCCCCCCCCCGCGTGATTTGTCGATTGCGCC
CAAAGCGGTAAAAACCGTATCGGGGTATTTGTCCTTAACCTGTTCCGCCGCCCGAATAAA
ATCATCAATCCCCTTTTCTTTCAGAAATCTGCCGATAAAGAGGAATTTTACGGGTTCTTT
TTCATCGGGAATATCCGCCTCGGAATAAGGATATTGCCGCAAATCCAGACCGATTCCGCC
CAAAATATGGATGTTTTTTATTTTGATGCCGTATTTGTCCGTCAGTTCGTCTTTGTCGTC
GGGGTTTAATACAATCAGGCTTTCCAACATCGGCAGGGCAATGCGGTATAAGGCAATCAA
AATCCCCTTTATGATTTTTGTTTTTAACGGTATGCCTTCCGGCTGCGGGGTAAATGCGAA
TCCCAAACCTTCCAGCATCCCGACGATTCTGGGCACGCCTGCCAGTTTTGCGGCAAAAGT
GCCGAAAATCACGGGTTTTGCGAAATAAGGGAAAACCAAATCCGGCGATATTTTTTTGAG
TTCTTTAAAGATGAGGAAGGTGGATTTTATATCCGAAAACGGGTTCAGCCCGCTGCGGTT
TGAACGGTAGGTAACGGGTGTAACCCCCATTTCCCTGATAATATCCAATTCATTGTCGGA
AAACTCCGATACAAAGGCATACACCTGATGGTTTTTGCCGATTAATTTTTTAATGACGGG
GGCGCGGAAACCGTAAATGCTGGATGCGACTGTTGTGATAAAAACGATTTTCATAAGGCG
GACACCTTGAATATGGATTGGAAATGCGGTCTGCTACGGCAGGGTTTCATCCTGTAACCC
AGCAAGGCTTGGGTTTGCCTGCGTATTATAGTGGATTAACAAAAACCGGTACGGCGTTGC
CCCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTC
CGTACTATTTGTACTGTCTGCGGCTCGCCGCCTTGTCCTGATTTTTGTTAATCACTATAA
AAATGCCGTCTGAAACGGTTTCAGACGGCATTTCGATGTCGGCGGCGGCTTTGCGGAATC
AGCCTTTGAAGCGTTTGAAGACCAGCGTGCCGTTGGTGCCGCCGAAGCCGAAGGAGTTGG
AAATGGCAACGTCGATTTCCGCGTCGCGCGCTTCGTTGGCGCAGTAGTCCAAATCGCAGC
CGGCTTCAACGTCTTGTTCAAAAATGTTGATGGTCGGCGGGATTTTGCCGTCGTGTATCG
CCAAAATGCTGTACACGGCCTCCACGCCGCCCGCCGCGCCGAGCAGGTGGCCGGTCATGG
ATTTGGTCGAGCTGACGACGGTTTTGTAGGCGTGTTCGCCGAACGCGCGTTTGAGGGCTT
TGGTTTCGTTGGCATCGCCCAAGGGGGTGGACGTGCCGTGCGCGTTGACGTAATCCACGT
CTTCGGGATTGATGCCGGCATCTTTCAGCGCGCGGGTAACGGCAAGGGCGGGGCCTTCTT
CGTTCGGCGCGGTGATATGGTAAGCATCGGAACTCATGCCGAAGCCGACGATTTCGGCGT
AGATTTTCGCGCCGCGTTTTTTGGCGTGTTCCAATTCTTCCAACACCAATATGCCCGCGC
CTTCGCCGATAACGAAGCCGTCGCGGCCTTTGTCCCACGGACGGGAAGCGGTGGCGGGGT
CGTCGTTGCGGGTGGAGAGGGCTTTCATCGCGGCAAAACCGCCCACGCCCAAAGTGCTGA
TTGCGCCTTCCGCGCCGCCGGCAACCATTATGTCCGCGTCGCCGTATTTAATCATACGGA
GGGAATCGCCGATGGCGTGCGCGCCGGTGGTGCAGGCGGAAACCATCCCGTAGCTCGGGC
CGCGGTAGCCTTTGAGGATGGTAACGTGTCCGGAAATCAGATTAATCAGAGAACCGGGGA
TAAAGAAAGGGTTGATTTTGCGCGCGCCGCCTTCGATTACGGCTTTGCCGGTGACCTCGA
TGCCGGGCAGTCCGCCGATGCCGGAACCGATGTTCACGCCGATGCGGTCTTTGTCGAGGT
TTTCCACATCGTCCAAACCCGAATCGGCGATTGCCTGCAATGCGGCGGCAATGCCGTAGT
GGATGAATACGTCCATCCGGCGCGCTTCTTTCGCGCTGATGTATTGTCCGATGTCGAAAC
CGCGCACCTCGCCGGCGACACGGCTGTTGATGTCGGATGTGTCAAAGCGGGTAATCGCGC
CGATGCCGCTTTTGCCGGTGAGCAGGGTGTCCCAAGCCTCTGCGACAGTGTTGCCGACAG
GGGAAACCTGACCTAAGCCTGTAATGACTACTCTTCTCTGACTCATGATAACCTCGCTGT
TGGTTGTCGGAATGGGGGCATATGCGGCTGTCGTGCAGATGCCGTCTGTAATTTGCGGCA
GGGGTTCAAACAGTTTGCCATATAAGGGAAAAGCCTCTATTGCGCGGTGCAGCAGAGGCT
GTTGTGTCGGGCGACGACCGGTTAGCCGTTGTGGGCATTGATGTAGTCGATAGCCAGTTG
GACGGTGGTGATTTTTTCGGCATCTTCGTCGGGGATTTCGCAGCCGAATGCTTCTTCCAA
AGCCATAACCAGCTCCACGGTGTCCAAAGAATCCGCGCCCAAGTCGTCTTGGAAGGAAGA
TTCGTTTTTCACGTCGGCTTCGTTTACGCCCAGTTGTTCAGCAACAATTTTTTTAACTTG
TTGTTCGATGTTTGACATATCAGTCGTTCCTTTATGCCTTGCGGCAGGTTGTTTAAGGGA
AATAAATCGGTGGTATTGTACCGACTTTTAATAGAGTTTTCTATCTAATGACTATTATAT
CAATATTTGCCGATTTGTACATTTTTGGGTGCGGCGGGTTTTGTCGTTCAAGTTTGACCT
GTGTGCCGTATGTTTGGCGGGATTTCGGTTAAAATGGCGGCATTTCCATCTGAAGCAGAA
AGCCCTGTCATGTATCCACTTGCCCGTCGCATCCTGTTTGCACTCGATGCCGAAAAAGCC
CACCACTTCACGCTCGACGCGCTCTACACGGTTTATAAATTGGGTTTGATTCCTGTAACC
GACAACCGTACCAAACCTGTAAAATTGATGGGTATGGATTTGCCCAACCCTGTCGGACTT
GCCGCCGGACTCGACAAAAACGGCGAATACATCGACGCATTGGGCGCGCTCGGCTTTGGT
TTCATCGAAATCGGCACGGTAACGCCCAACCCGCAGCCCGGCAACCCGCAGCCGCGCCTC
TTTCGCGTTCCCGAACACCAAGGCATCATCAACCGCATGGGTTTCAACAACCACGGTATC
GACACCATGATACGCAACATCGAAAAAAGTAAATTCAGTGGCGTATTGGGCATCAACATC
GGTAAAAACGCGGTTACACCCATCGAAAACGCTGCCGATGATTATTTAATCTGCCTTGAA
AAAGCCTACGCACACGCAAGTTACATTACCGTCAATATTTCCTCGCCCAACACTAAAAAC

CTCCGCGCGCTGCAAGGTGGCGACGAGTTGAGCGCATTGCTTGAGGCTTTGAAAAACAAA
CAGGCACAGCTTGCCTCTGTACACGGGAAATACGTCCCGCTCGCCGTCAAAATCGCCCCC
GATTTGGATGAAGCACAAATCGAAGACATCGCCCACGTTGTCAAATCCGTCGAAATGGAC
GGCATCATCGCTACCAATACCACCATCGACAAATCAAGTCTCGGCAGCCATCCGCTCGCA
GGCGAGCAGGGCGGTTTGAGCGGGCTGCCCGTTCATGAAAAAAGTAATCGGGTGTTGAAG
CTGTTGGCAGACCACATAGACGGCAAGCTGCCGATTATCGGCGTAGGCGGCATTATGGAA
GGCGAGGACTCGGCAGATAAAATCCGCTTGGGCGCGACCGCCGTCCAAGTGTACAGCGGA
TTGATATACAAAGGTCCGGCATTGGTCAAAGAATGTTTGAAGGCTTTGGCGCGATGACGC
GATCCGCCCAAAATGCCGTCTGAACGCACGTTTTGCCGTTCAGACGGCATTTTCATTTCC
TTTTTCCGCCTGACGCCCCTTGAAAATCCCTTACGCGCCGCCCTGTTTGAAATAAGGCAA
ACCGATGCGTGAACACGGAGCAGGCAATCGGAGTAAAAAATGAACCTTGATTTAACCGCG
CAAAAAGTCCGTCTTTCTTGGAAGGATATTCTGTGGGGGTATGGGAATAAATACTTGGGT
TGGGCTGATGTGGCAGCTTATGCCCGAAAAATGACGCTTTCAGATCATGATGAACGTGTG
TTCAAACTATCTTTAATCAACAAATCCAATATTCTTGAATTAAAGCCTGTTCTGGAAGAT
TTGGCTTCGGAAATGAGGGATTATTCCCCTAAAAATTGGCTGTACGTCCTCTTAAGCGAT
GTATTCCATAGAAAAGAAGAATTTGAGGATCCTTTGGGGGAAGTTGAAAAAATTTATGCA
GATTTTGATTATCCGGAAGAAATAGAATCATTTGTCAGGTATATGCCGCCCAAAGACGGT
TATATTCCTTCTGCCCACACCTATGAAGAAAATATTGCCCGGTTATATTCTCACTGGGAA
CACTATTTGAACAACGGCGGAGGGCAGGGTTAAAACCGGCAATCCGATGCCGTCTGAAGC
ATTATCCGGCCTTCAGACGGCATTTTGTTTTCCGACAGTTTATAAACTGTCGTTGTTTCT
TGACAGAAACAACGACCTTATTTGAAACGATTGGAGGACATGATTATGGGTTTTTGGAAT
GGTGTGGCAAAAGCAGCAAAAGCAGTGGGAGAGGGAATGATTGAAGCCGGCAATGAGCAT
AAGGCGTTGAAAATGGAATATGCGGAGAAATCAAGTGAGGAGCTGCATGAAATCGTCAAG
AGTGATGGTTTTTTTAAAAATTCCACACGGGAGAAAAGTGCGGCTTATGCTATTTTAAAA
GAGCGTGGCGAGGTGTGAACAGGAAACGGCGGCATTTGCCGCTGTTTTTTATTGGTAGGC
ATCCGTCCGAATATCGGGGCAAGGTTTCAGACGACATCGAAGGTTGCTATGATATAGTGG
CTTGACTTTAAACCGGTACGGCATCCCCTCGCCTTGTCCTGATTTAAAGTTAATCCACTA
TCTCATTCCCGTCATCCTTCCAAACGGAATCCGAAATGTCCGACAACCGCCTCGACACCG
CCCGCCGCCATTCCCTCTTCCTCGCCCGCCAGCTCGACAACGGCAAACTCAAGCCCGAAA
TATTCCTGCCTATGCTCGACAAGGTTTTGACCGAAGCGGATTTCCAAGCCTTTGCCGACT
GGGGCGAAATCCGCGCGGAAGAAAACGAGGAAGAATTGGCGCGGCAGTTGCGCGAGTTGC
GCCGTTATGTGGTGTCGCAGATTATCGTGCGCGATATCAACCGTATCAGCGATTTGAACG
AAGTAACCCGCACGATTACGCTGTTTGCCGATTTTGCCGTCAATACCGCGCTGGATTTTG
CCTACGCCTATTATCGGGACATGTACGGCACGCCGATCGGGCGTTATACCAAATCGCCGC
AGCATTTGAGCGTGGTGGCGATGGGCAAGGCGGGCGGCTATGAGTTGAACGTGTCTTCCG
ACATCGATTTGATTTTCGTCTATCCCGAATCAGGCGACACCGACGGCAGGCGCGAACGGG
GCAATCAGGAATTTTTCACCAAAGTCGGGCAGAAACTGATTGCGCTGCTGAACGACATTA
CCGCCGATGGGCAGGTGTTCCGCGTCGATATGCGGCTGCGGCCGGACGGCGATTCGGGCG
CGTTGGTATTGAGCGAAACCGCGCTGGAGCAATATTTGATTACACAGGGGCGAGAATGGG
AACGCTACGCGTGGTGCAAAGGTCGCGTGGTTACGCCGTATCCGAACGACATCAAAGCAC
TGGTGCGCCCCTTTGTGTTCCGCAAATATCTGGATTACGGCGCGTATGAGGCGATGCGTA
AGCTGCACCGCCAAATCAGCAGCGAAGTCAGCAAAAAAGGCATGGCGGACAACATCAAAC
TCGGCGCGGGCGGCATCCGCGAAGTCGAATTTATCGCCCAGATTTTCCAGATGATACGCG
GCGGACAAATGCGCGCGCTGCAACTGAAAGGCACGCAGGAAACGCTGAAGAAGCTTGCCG
AGCTGGGCATCATGCTGTCTGAACACGTCGAAACCCTGCTTGCCGCCTACCGCTTCCTGC
GCGATGTTGAACACCGCCTGCAATACTGGGATGACCAGCAAACCCAAACCCTGCCGACCT
CGCCCGAACAGCGGCAACTGCTCGCCGAAAGCATGGGTTTCGACAGTTATTCCGCTTTTT
CAGACGGTCTCAATGTTCATCGGAACAAAGTCAATCAGTTGTTCAACGAAATTTTGAGCG
AACCCGAAGAGCAAACGCAAGACAACAGCGAATGGCAATGGGCATGGCAGGACAAACCCG
ACGAAGAAGGGCGGCGATGCCGTCTGAAGGCGCACGGGTTCGATGCCGAAACCGTCGCCG
CAAGGCTCGACCAAATCCGCCACGGCCATAAATACCGCCATCTTTCCGCACACGCCCAGC
CGCGTTTCGATGCGGTTGTGCCGCTGTTCGTACAGGCGGCGGCAGCGCAAAGCAACCCGA
CCGATACATTGATGCGGCTGTTGGATTTTCTCGAAAACATCAGCCGCCGATCCGCCTATC
TCGCCTTCCTCAACGAACATCCGCAAACCTTGGCGCAACTGGCGCAGATTATGGGCCAAA
GTTCTTGGGTGGCGGCGTATCTGAACAAATATCCGATTTTGTTGGACGAACTCATCAGCG
CGCAGCTTTTGGATACCGCGTTTGATTGGCAGGCGCTCGCCGCCGCCCTTTCAGACGACC
TCAAAGCCTGCGGCGGCGATACTGAAGCGCAAATGGACACCCTGCGCCGCTTCCAGCACG
CCCAAGTCTTCCGTCTCGCCGTCCAAGACCTCGCCGGACTGTGGACGGTAGAATCCCTCT
CCGACCAACTCTCCGCCCTCGCCGACACCATCCTCGCCGCCGCCCTGCTGTGCGCATGGG
CGGACATGCCCAAAAAACACCGCGACACACCGCAATTCGCCGTCGTCGGCTACGGCAAAC
TCGGCGGTAAAGAACTCGGCTACGCCTCCGACCTCGACCTCGTCTATCTCTACGACGACC
CCCACCCCGACGCAGGCGACGTGTACAGCCGCCTCGCCCGCCGCCTGACCAACTGGCTTT
CCGCCGCCACTGGCGCAGGCAGCCTCTACGAAACCGACCTGCGCCTGCGCCCTAATGGCG
ACGCCGGTTTCCTCGCCCACAGCATCGCCGCCTTTGAAAAATACCAGCGCGAAAACGCCT
GGACGTGGGAACACCAATCCCTTACCCGCGCCCGCTTCATCTGCGGCACGTCCGAAATTC
AGACGGCCTTCGACCGCATCCGCACCGAAATCCTCACCGCCGAACGCGACCAAACCGCCT
TGGCAGGCGAAATCATCGAAATGCGCGAAAAAATGTTCCCCACCCACCCGCCTGCCGACA
GCAACGTCAAATACGCGCGCGGTGGCGTGGTCGATGTCGAATTTATCGTCCAATATCTGA
TACTTGCCCATGCCCGCCAGTATCCGCAACTCTTGGACAACTACGGCAACATCGCCCTCT
TAAACATCTCCGCCGACTGCGGTTTGATTGACAAAACCCTCGCCGGACAAAGCCGCACCG
CCTATCGCTTCTACCGCCGGCAGCAGCACAACACCAAACTGCGCGACGCGGCAAAAACCG
AAGTAACCGGCGAACTGTTGGCACATTACGGCAATGTCAGGAAATTGTGGCGGGAAGTGT
TCGGCGAAGAAGCGGCAACCGTCTGAACAAAAAATGCCGTCTGAAGCCTGACAATCTGGG
TTTCAGACGGTATTTTCGTACCGTGCCGTTTTAAGGTTGCGGCAGAGCTAAAGCGATTTA
TCGGGAATGGCTGAAACCCAAAAACCGGATTCCTCTTTCGCGGGAATGACGGGATTTCAG

GCTTCTGTTTTTGTGGGAATGATGGGATTTTTATCCAAGCAAAAATCAAAACAAACAAA
TAAGAACCGTTTAAAACCCCGCCGTTTCCATTAAAATAGCGCATTCTACTTTTTAGACGG
CCTTGGATTCGGATTTCAAGTGCAACACTAGTGTATTAGTGGTTGGAACAGATTCAAGAA
TAAAACACTTGGCGTTTCGTAGCCAAGTGTTTTTCTTGGTCGGTGGTTCAACTCATCTTG
AACCCTGCGTATCTCCCGATCACTGATGTTACGGAAATCGGTTTGTTTGGGGAAGTATTG
CCGGATGAGTCCGTTGGTGTTCTCATTCAGCCCTTTCTCCCAAGAATGGTAAGGGCGACA
AAAATAAGTCTCCGCTTTCAATGCTTTGGTTATTTTGGTGTGTTGGTAGAACTCTTTGCC
GTTATCCATGGTAATGGTGTGCACCCTGTCTTTATGTGCCTTTAATGCCCTAACAGCTGC
CCGGGCAGTGTCTTCGGCTTTGAGGCTATCCAATTTGCAGATGATGGTGTAGCGGGTAAC
GCGTTCGACCAAGGTCAATAATGCGCTTTTCTGTCCTTTGCCGACAATGGTGTCGGCTTC
CCAATCGCCGATACGGGATTTCTGGTCGACGATAGCGGGTCGGTTTTCTATGCCGACACG
GTTGGGTACTTTGCCTCTGGTCCATGTGCTGCCGTAGCGTTTGCGGTAGGGTTTGCTGCA
TATTCTGAGATGTTGCCACAACGTGCTGCCGTTGCTTTTGTCTTGGCGAAGGTAGCGGTA
AATGGTGCTGTGGTGGAGCGTGATCTGGTGGTGTTTGCACAGGTAGGCGCATACTTGTTC
GGGACTGAGTTTGCGGCGGATAAGGGTGTCGATGTGCTGAATCAGCTGCGAATCGAGCTT
ATAGGGTTGTCGCTTACGCTGTTTGATAGTCTGGCTTTGCCGCTGGGCTTTTTCGGCGCT
GTATTGCTGCCCTTGGGTGCGGTGCCGTCTGATTTCGCGGCTGATGGTGCTTTTGTGGCG
GTTCAGCTGTTTGGCGATTTCGGTGACGGTGCAGTGGCGGGACAGGTATTGGATGTGGTA
TCGTTCGCCTTGGGTCAGTTGCGTGTAGCTCATGGCAATCTTTCTTGCAGGAAAGGCCGT
ATGCTACCGCATACTGGCCTTTTTCTGTTAGGGAAAGTTGCACTTCAAATGCGAATCCGC
CGACCTCTTTCAGTTACAGCAGCTTGATCCCTTTCCCTTATCCAACGGGGGAAGGCTAGG
ATAGGGTGGCTTGCAAATATACAGAACAAGGGACAAGAGCCACCCTCTCTCCAACCCTCT
CCCTCCGTACGGGAGGGGGTGGATTCTCGCGGGCGAAGCCCACGCTACGGTTAGCCTTTA
CCCCAGCACAAACAATTCCCGCCCGTGCGCCTTCAGCCAACTTTTAGCATTGTCGGTATG
CGGCGTCAGCGTGTTCACCAAATGCCAAAAGCGCGGACTGTGGTCGGGGTGGCGGAGGTG
GCAGAGTTCGTGGATGCAGACATAGTCGGCGACGTATTCGGGCGTCCCGATCAGCCGCCA
GTTGAGGCGGATGCCGGTGTGCGGGCGGCATACGCCCCAAAAGGTTTTGGCGTTGCTCAG
GTCTGTGGCGGTGGGCGTCAGTCCTGTTTCGGCTGCGTGTTTTTCAAGGCGGGGCAGCAG
GTATTCGCGGGCGCGTTCGTTCAACAGGCGGCGCAGGTGGTCGATTTGTGCGGCGGTTTC
TTTTCGGGGAAGCAGGATTTCAGACGACGTGATACGGATATGGCTTTGGCTGTGGGTATC
CAGCTTGGTCTTTATTCCCCGATACCAAATCCACTCGGGTAAGTTTGGGTGGGAAACAGG
ATGCACGGGCGTTTTGGCAAGCGTGTTCCGCAAAATCGTTTCGTTTGCCGCCAGCCAGTT
TGCTAACGCGTGGTCTTGAAAAAAGGGTGGGACGTTGATGCTGACCGTCTGCATATTGAC
GGGGCGCAGAATCAGATTTTTCTTGGCACTGCGTTTGAGTTCGATTTCGATGCACAAACC
GTCGGAAAGAGTATAGGTGAAGCGTTTCATAGTTGTGAATAGGTTTCAGACCGGATACAT
CGTCTGAAACAGGAATTTTCCATATCAGGCGGCAAACTTCGGATAATATACAAAATCAAA
CATCTGCGCTACAAGGTTCAGCCGAACAAGCCGCCGATATATTTGCTGATGGTGATGGCG
CTGAGTACTGCCATCAAACCGACCACAATCACGCCGGAAACGGTGAGCCACAGCGGGTGT
TTGTAGTCGCCGACAATTTTGGTTTTGTAGGCGGCAATCAGAATCAGACCGAGGGAAATC
GGTAAAATCAGGCCGTTTAATGCGCCTACGAACACCAGCACCTGCGCCGGTTTGCCGATG
GTGGAAAATACGGCGGTGGACACGGCGATAAAGGCAATAATCCATTTGTTTTTATTGCGT
TCGATAGACGGGCTGAGACCGGAGAAGAACGACACCGAAGTATAAGCCGCACCAATCACC
GAAGTAATCGAAGCCGCCCAAATCACCACGCCGAAAATCAGCAGGCCGATGTATCCCGCC
GCATATTCAAACGGTGTGGAAGCAGGGTTGTCGGGATTGAGCTGTACGCCTTGGCTGACC
ACGCCCAAAACCGCCAAAAACAATACAATCCGCATAATCGAGGCAATCAGGATCGCCCGC
ACCGAGCTTTGGCTCACTTCCGGCAACGCCGATTTGCCTTTGATACCTGCGTCCAGCAGA
CGGTGCGCACCGGCGAAGGTGATGTAGCCGCCGACCGTGCCGCCCACCAGTGTAACAATC
GCCATTGCATCGAGTTTTTCCGGCATAAAGGTATGCACGGCGGCATCTGCCAGCGGCGGA
TTCGCCTGCCATGCCACATAAACCGTCAGCGCAATCATTACGAAACCCATCACTTGGGCG
AATTTGTCCATCACTTTGCCTGCTTCTTTAAACAGAAACACACCGATGGCAATCACGCCG
CTGATCACGGCACCGGTTTCCGGTGACAGTCCGGTCAGCAGGTTCAGACCCAAGCCTGCG
CCGCCGACGTTGCCAATATTGAACGCCAAACCGCCCATCACAATCAGCACAGCCAAGAAA
TAGCCTGCGCCGGGCAAGACCTGATTGGCAATATCCTGCGCCTGTTTTTCGGAAACGGCG
ACAATCCGCCAAATATTGAGCTGCGCCCCGATGTCGAGCAGAATCGAGAGCAGAATCACA
AAGCCGAAACTTGCCGCCAGTGCTTGGGTGAAGGTGGCGGTTTGGGTCAGAAAGCCCGGG
CCGATGGCGGAAGTCGCCATCAGGAATGCAGCGCCGATTAAGGCATTTCTGCGGTTTTTT
TGATCAGACATAATCGCTTATCCTCTATAAAATTGGTTGTTGCTGTGTTTGGGCGAAACC
TGCGGTTTTAGCTACGCAGAAACTCGCTTTGCTCGTTTTGGCGAAACCTGCGGTTTTCAG
ACGGCCTATGAACTGTTTTTCAAGCAGAAACTTTGATGCCTGCCGCCAGTAGTTCCTGCC
GGATTTTTTCGGCAAACACCACGGCGTGCGGCCCGTCTCCGTGCAGACAGATGCTGTCGG
CTTGCACGGCAACCAGGCTGCCGTCCACTGCTTTGACCTGCCCGTCCCGCACCATCTGCA
ATACTTGGGCGATGGCTTCTTCGTCGCTGTCCACCTGCGCATCGGGGCGGCTGCGGGGAA
CCAGCGTACCGTCGGGCATATAGCGGCGGTCGGCGAATACTTCGGAAATCACACCCAAGC
CTGCGGCTTTTCCGGCTTCCAAGAGCAGGCTGCCGGAAAGTGCCATCAATTTCAATTTCC
GGTCGAAATCCGCCACAATTCGGGCAACGGTATCCGCCAGCGCACGGTTTTTCGCCGCTT
GATTGTACATTGCGCCGTGCGGTTTGACATAAGCCATTTCCAAACCCTGATCACGGCACA
AGGCCTGCAATGCGCCCAACTGGTAATTCAGACACGCCCGCAAATCGGCTTCGGACAGAT
TCATTTCGGTACGGCCGAAGTTTTCCCGATCGGGATAGCCGGGGTGTGCTCCGATGCGCA
CGCCGTTTTGTTGGGCATACGCCAATGCCGCCCGAATATCGGCAATGCTGCCGGCGTGTT
GGGCGCAGGCGATGTTGGCCGAAGTAATCAGCTGCAACAAGGCTTCGTCGCTGCCGCAGC
CTTCGGCGAGATCGGCGTTTAAATCAACCTGCTTCATGGGTGATTCTCCGTATTTGGTTC
AGATAGGCTTGTTTTTGCGCCGCAGGGCGGTGGCTTCTTTCAAGCCGATTATTTTGAATT
TGACTTTGCTGCCGAAGCGCACCTGTGCCAGCCTGCCCAAATCGGCGGCGGCAACGGTAG
CGATTTTCGGATAACCGCCGGTGGTTTGCGCATCGGCCAGCAGGATAATCGGTTTGCCGC
CGGGCGGCACCTGCACGGTTCCTGCCTGAACAGCGTGGGACAGCATTTCCAAAGGTTGCG

ACAGGGTCAGCGGCTGTCCGTCGAAGCGGTAGCCCATGCGGTTGCTATCGCTTTGCAGCG
TCCACGTTTCCCGTTCCAGATTCAGACGCCCTTTTTCACTGAAAGCGGCATATTCCGACG
AAGGAACAAGGTGGACGGTATCGGTAAACGGTATCGGGGCAATGCCGACTTTGGACAATT
CCTGCGCACCTTTGCCGATGGGGAGATAATCGCCTTTTTGCAGCATTCTGCCCTGATGGC
CGCCGAAACCGGCTTTCAGGTCGGTGCTTCTCGAACCCATCACTTCCGGCACATCAAATC
CGCCCGCCACGCACACATAGCCGTACATGCCCTGCACGGCACGCACCAGTTTCAAGGTCT
GCCCTTTGCGGGCGGTATAACGCCAATACGAATAGACCGGTTCGCCGTCCAATTCCGCCT
GATACACGGCACCGGTGAGACAAAACGGCGTATCCCGTTCAAACACCAGCATTATCCCGC
CCAAAGCGATTTCGATTGCGGCCGTGCCTTCGTCGTTGCCCAATAAAATATTGCCCGCCG
CCAAAGCAACCGTGTCCATCGCACCGGCATGACCGATGCCGTAACGCCGGTGTCCGTAGC
GTCCGGTATCCTGAATATGCGCCGGTGCCTGCACTGCCGAAACGTGAATCATGGCTCAAT
CCTTTCTGCAACAAAGCGGACTTGGTCACCCGCCGCCAGCAGGGTCGGCGGATTCAAATC
GGCTCGGAACAAGGGTAATTCGGTTCTGCCGATAATCTGCCAGCCGCCGGGCGAAGCGAA
CGGATACACACCGGTCTGACTGCCGCCGATACCGACCGAACCGGCAGGAACGGACGTTCT
CGGCACGGCACGGCGGGGCGTGTGCAATGCTTCGGGCAAGCCGCCCAGATAAGGGAAACC
GGGCTGGAAGCCCATCATAAATACGGTATAAGTTTGCGCCGTATGGCGGCGGACGATTTC
GGAAATAACCGTCTGATGGAAAGCAGCGACTTCCGCCAAATCCGGGCCGTATTCGCCGCC
GTAGCAGACGGGAATTTCCACCAGTTTGCCCTGATGGTCTGTAACGGCGGTGTGTTCCCA
CACATATTGCAATTCATCGGCAAGCGTCGCCAAATCGGTATCGAAACGGGTAAACACGGT
CAGATTGTTCATGCCGACCACCACTTCCTCAATCCTGTCGTGCTGCCCGAGCGCAGCGGC
AAACGCCCACAACTTTTCCTGTTTGCCCAGTTCGGAAGGCGCATTCAGTCGGTAGACCAA
AGCGGATTCGCTGATTGGTGTGATCTCTATTCTCATTTGTTGTTCATTTTGGTTATGTTT
TAATGAATCTATATGCAGGGGCGGCGGTTTGTCAATATCTTCTGTGCTGCATCATCAAAC
CGTCGATTGGAAAAGTGCTGCCCTGCCGCTGCACTTTTTCAGACGACCTTAAACCGTTTC
TATTAAAATAGCGCATTCCACTTTTCAGACGGCATCCTTATGTTTCCCGACCAATCCGCC
CCCAACCTGCTGCAAGGCTTGAATCCCGAACAACTCTCCGCCGTAACCTGGCCGCCGCAA
TCCGCACTTGTGCTGGCGGGCGCGGGCAGCGCCAAAACGCGCGTGCTGACCACGCGCATC
GCATGGCTGTTGCAAAGCGGACAAGCCAGCGTGCACAGCATTATGGCGGTAACGTTTACC
AACAAAGCCGCCAAAGAAATGCAAACCCGTTTGGGCGCGATGATTCCCATCAATGTCCGC
GCCATGTGGCTCGGCACGTTCCACGGTCTCTGCCACCGCTTTTTGCGCCTGCACCACCGC
GACGCCGGTCTGCCGTCTTCCTTTCAAATCCTCGACGGCGGCGACCAGCTTTCCCTCATC
AAACGCCTGCTCAAAAGCCTCAACATCGCCGAAGAAATCATCGCGCCGCGTTCGCTGCAA
GGCTTTATCAACGCGCAAAAAGAATCCGGTTTGCGCGCTTCCGTGTTGAGCGCGCCCGAT
CCGCACACACGCCGCATGATTGAGTGCTACGCCGAATACGACAAAATCTGCCAACGCGAA
GGCGTGGTCGATTTTGCCGAACTCATGCTCCGCAGCTACGAAATGCTGCAAAACAACGAA
ATCCTGCGCCAGCACTACCAAAACCGCTTCAACCACATTCTCGTTGACGAGTTCCAAGAC
ACCAACAAACTGCAATATGCTTGGCTGAAACTGATTGCCGGCAACCACGCAGCAGTATTT
GCCGTCGGCGACGACGACCAAAGCATTTACCGTTTCCGTGGCGCAAGCGTCGGCAACATG
ACCGCGCTGATGGAAGAATTCCACATCGACGCGCCCGTCAAACTCGAACAAAACTACCGC
TCCGTCGGCAACATCCTTGCCGCCGCCAATGCCGTGATTGAAAACAACGACGAACGACTC
GGCAAAAACCTGCGCACCGACGCCGAAGCAGGCGACAAAATCCGCTACTACTCCGCCTTT
ACCGACCTCGAAGAAGCCCGGTTCATCTTGGACGAAACCAAAGCCCTCGAACGCGAAGGC
TGGGATTTGGACGAAATCGCCGTCCTCTACCGTAGCAACGCCCAATCCCCCGTTATCGAA
CAAAGCCTGTTCCGCAGCGGCATTCCCTACAAAATCTACGGCGGCTTGCGTTTTTACGAA
CGCCAAGAAATCAAACACGCGCTCGCCTACCTGCGCCTCGCCGTCAATCCCGACGACGAC
AACGCCCTCTTGCGTGTCATCAACTTCCCACCGCGCGGCATCGGTGCACGTACCGTCGAA
AATCTTCAGACGGCCTCAAACGAACAAGGCATCACCCTCTGGCAAGCCGCCTGCAACGCC
GGCGCGAAAGCCGCCAAAGTCGTCGCCTTCGTCCGCCTGATTGAAGCCCTGCGCAACCAA
GTCGGACAACTGTCCCTGTCCGAAATCATCGTCGGCATCCTCAAAGACAGTGGCTTGACC
GAACACTACCGCACCCAAAAAGGCGACAACCAAGACCGTCTCGACAACCTTGACGAACTC
GTCAACGCCGCCATCGAATTCAAACCCGAAGACAGCAACTTCGAAATCCTGCCTGAAAAC
ATTTCAGACGACCCCGCCTTCCCCATTCTCGCCTTCCTAAGCAATGCCGCCCTCGAATCC
GGTGAAAACCAGGCAGGCGCAGGCGAAAAGGCCGTCCAACTCATGACCGTCCACGCCGCC
AAAGGCTTGGAATTTAACGCCGTCTTCCTCACCGGCATGGAAGAAGGCCGCTTCCCCAGC
GAAATGAGCCTTGCCGAACGCGGCGGCCTCGAAGAAGAACGCCGCCTCATGTACGTCGCC
ATCACCCGCGCCCGCAAACGCCTCTACATCACCATGGCGCAACAACGCATGCTGCACGGA
CAAACCCAATTCGGCATCGTCTCCCGCTTCGTCGAAGAGATCCCACCCGAAGTATTGCAC
TACCTGTCCGTCAAAAAGCCTGCCTACGACAGTTACGGCAACACGCGCCAAACCGCCGCA
TCCAAAGATAAAATCATCGACGACTACAAACAGCCCCAAACCTACGCAGGTTTCCGTATC
GGACAAAACGTCCGCCACGCCAAATTCGGCACCGGCGTGATTATCGATGCCGCAGATAAA
GGCGAATCCGCCCGACTGACCATCAATTTCGGCAAACAGGGCGTGAAAGAGTTGGACACC
AAGTTTGCGAAATTGGAAGAGATGTAAATTTGAAATGTAGGTCGGATATTCGTATCCGAC
CTACGGCAAAAACCTTAGCAGGAGAGAATAGAAACCCGTAGCGTGGGCTTTTTCTATGAA
TCAAGCCCAAAATTTCAGACGGCATTTTTAGCCGTCATTATCGTGGATGAAGCCCACGCT
ACAATGTACACACAGAGCAAATAGAGATGTGGGTCGGATATTCGTATCCGACAAAAACAT
TTGACGCGTCTATTGTTTCCGAAACACCGCTGTTGGAAATGTCGGATACAAGAATCTGAC
TTACGGCAAAAAACGTAGTAAGGACAAAGCAAAAGGCCGTCTGAAAACGGGAAGGGCAAT
TTTGCCGCAACCGCCGCCGTCATTCCCGCGCAGGCGGGAATCCAGACCTTTCGGCACGGA
AACTTATCGGATAAAAGGTTTCTTTAGATTCCACGTCCTAGATTCCCGCCGGAACATAAA
TGACGGACGGTAAAAGCCGGGTATGAATACCCACCCTCTGTTATCACTGAGATCAATAAG
GAAGAACATTATGTCCCAAGTTTTTAAAGATTTTGACTTGTCCTCCGTATGGAAAACTAA
TAGTTGGGCAGATGAAAACTACAAAGAAGCCCCGTTTACCCCTGAAATTTTGGCTGCCGT
AGAAAGTGAACTGGGCTATAAATTGCCGCAAAGTTTTATTGAATTGATGGCAGTACAAAA
CGGCGGAATATTTGTCAAAAACTGTTTTCCGACCACGCAGAGAAATTCGTGGGCGGAAAA
TCATGTGCAAATTTGCGAGGTATCGGGAATCGGTTTTGAAAAAGAAGGGAGTTTGTGCGG

CGCGATGGGGCAAAAACTTTGGCTGGAAGAATGGGAATACCCGCCTATCGGCGTGTATTT
TGCCAACGACCCGTCAGGCGGTCATGCCATGTTTGCCTTAGACTATCGGGCGTGCGGCAA
AGACGGCGAGCCGAAAGTGGTGTTTGTCGAACAAGAATCGGATTTTGAAATCGTCGAACT
TGCCCCCGATTTTGAAACCTTTATCCGCAGCTTGCGGCATGAAGATGAGTTTATTGACGA
AGAAATATAAAACGGTGGTTGAAAAACTGAAATCATCAAGAGAAAACGGGCGAAATAACG
GGTAATCGCTTGAATCCGTAAGGAAAACGGTTTGGTGGAACGCGCCATCCAAGACCTTTG
CAAAAAACTGTCCCCGACAGCATTGACATTATTAACAGAACTTATCAATTTTGGAGCTAT
CTCAAATATAATTCGGTTATCCTGTTGTATCCATTAAATCATATGCTTCAATTAATTGTT
GTTCTAGCTCTTATACCAATTTTGGATTGCGAATTCCTGACACAATCTCAAATTCTTCTG
CATCTATGCAAACACCTGCATAAATTTCAATAACAAGGGAACGCAATAATTGAAGCTCTT
CTCTTGTTAAAGAAATAATAATGTCATCACCTTTGTAATTGATTATATTCATAATAATTT
TATTTTTGTTTGTCAAAGTAAGTTTTGCCTAAGGTTGGTCTAAATGCAGTTCCACCATCT
TTTGAATTTGGGTCTCTGATTACAATTGCTCCAGACTTATCATCCCAAATTGCTCTTATG
TGTTTGGATTGTAATCTTCGAATTCCCAAGAAAAAAATCGTAATAAGTTTGAAAGTGTCA
AATCCCAAGTTTCTTTTGAGCAATATTCTAATATTTTATCAATTTCACTTTTAATAATCT
TATGATCAAACTGTTCTAATATTAATGCATTAGACCAAAAAAAACCTTCTTTATTACAAT
GATGGGAAATCCATTTAGGAGAACAAATGCAAAGTGAAAAAATAGATGAGCCTTGTTCTC
CTTCGATTCCGATATCCAAATCTATCCATCTATGGAAATTATCTGGAATTTCGGGGGTAA
ATTTTTCAAAATCAATATCATATAAATTTATGCTTTTTAAATCCAATTTAATCATTAGGG
CTGTCCTAGATAAATAGGGAAATTCAAATTAAGTTAGAATTATCCCTATGAGAAAAAGTC
GTCTAAGCCGGTATAAACAAAATAAACTCATTGAGCTATTTGTCGCAGGTGTAACTGCAA
GAACAGCAACAGAGCCCGACAGCATTGTTTATACGGATTGTTATCGTAGCTATTCATTTA
CGCAAGTTTAACGGCATTCCCAAAGCGCATTTTGAGCTGTATTTAAAGGAGTGCGAATGG
CGTTTTAACAACAGTGAGATAAAAGTTCAAATTTCCATTTTAAAACAATTAGTAAAATCG
AGTTTATCTTAGTTGTCCAGGACAGCCCCATTATTTTTATAACACCGTGAAGCCGCACAG
CAGTTTGAACAGTGATACGCCGTTTGCGGGCTTACGAGTTTATTTTCCCGGCCTGCAGTT
TGAGCAATACGGTGATTTCCTACGGTTAATACAAATGTTTACACATTGATACATTTCATT
TATAGTTCCGCCTATTTGAAAATAGAAAATATGAATTCGACCGCAAGTAAAACCCTGAAA
GGATTGTCGCTGGTGTTTTTCGCCTCTGGATTCTGCGCCCTGATTTACCAGGTCAGCTGG
CAGAGGCTTCTATTCAGTCACATAGGTATCGATTTGAGTTCGATTACTGTCATTATTTCT
GTATTTATGGTCGGCTTGGGTGTAGGTGCGTATTTCGGTGGACGCATTGCTGACCGTTTT
CCTTCAAGTATCATCCCCCTGTTTTGCATCGCTGAAGTATCCATCGGTCTGTTCGGTTTG
GTAAGCAGGGGTCTGATTTCCGGCTTGGGGCATCTTTTAGTTGAGGCTGATTTGCCCATC
ATCGCTGCTGCCAATTTCCTCTTATTGCTGCTTCCTACCTTTATGATGGGCGCGACCTTG
CCCTTGCTGACCTGTTTTTTAACCGGAAAATACATAATGTTGGCGAGTCTATCGGTACC
TTATATTTTTTCAACACTTTGGGTGCGGCACTCGGATCGCTTGCCGCCGCCGAATTTTTC
TACGTCTTTTTTACCCTCTCCCAAACCATTGCGCTGACAGCCTGCTTTAACCTTCTGATT
GCTGCTTCAGTATGGCTGCGTTACAGAAAGGATGGATATAGTGAACACTAAACCGAATAC
TAGTTTGATTTATATGCTTTCTTTCCTTAGCGGCTTATTGAGCTTGGGTATAGAAGTCTT
GTGGGTGAGGATGTTTTCGTTCGCAGCACAGTCCGTGCCTCAGGCATTTTCATTTACCCT
TGCCTGTTTTCTGACCGGTATCGCCGTCGGCGCGTATTTTGGCAAACGGATTTGCCGCAG
CCGCTTTGTTGATATTCCCTTTATCGGGCAGTGCTTCTTGTGGGCGGGTATTGCCGACTT
TTTGATTTTGGGTGCTGCGTGGTTGTTGACGGTTTTTCCGGCTTCGTCCACCACGCCGG
TATCTTCATTACCCTGTCTGCCGTCGTCAGAGGGTTGATTTTCCCGCTCGTACACCATGT
GGGTACGGATGGCAACAAATCCGGACGACAGGTTTCCAATGTTTATTTCGCCAACGTTGC
CGGCAGTGCATTGGGTCCGGTCCTTATCGGCTTTGTGATACTTGATTTCTTGTCCACCCA
ACAGATTTACCTGCTCATCTGTTTGATTTCTGCTGCTGTCCCTTTGTTTTGTACACTGTT
CCAAAAAAGTCTCCGACTGAATGCAGTGTCGGTAGCAGTTTCCCTAATGTTCGGCATCCT
CATGTTCCTACTGCCGGATTCTGTCTTTCAAAATATTGCTGACCGTCCGGATAGGCTGAT
TGAAAACAAACACGGCATTGTTGCGGTTTACCATAGAGATGGTGATAAGGTTGTTTATGG
GGCGAATGTATACGACGGCGCATACAATACCGATGTATTCAATAGTGTCAACGGCATCGA
ACGTGCCTATCTGCTACCCTCCCTGAAGTCTGGCATACGCCGCATTTTCGTCGTTGGACT
GAGTACAGGTTCGTGGGCGCGCGTCTTGTCTGCCATTCCGGAAATGCAGTCGATGATCGT
TGCGGAAATCAATCCGGCATACCGTAGCCTTATCGCGGACGAGCCGCAAATCGCCCCGCT
TTTGCAGGACAAACGTGTTGAAATTGTATTGGATGACGGTAGGAAATGGCTGCGTCGCCA
TCCTGATGAAAAATTCGACCTGATTTTGATGAATACGACTTGGTACTGGCGTGCCTATTC
CACCAACCTGTTGAGTGCGGAATTTTTAAAACAGGTGCAAAGCCACCTTACCCCGGATGG
TATTGTAATGTTTAATACCACGCACAGCCCGCATGCTTTTGCTACCGCCGTACACAGTAT
TCCCTATGCATACCGCTATGGGCATATGGTAGTCGGCTCGGCAACCCCGGTAGTTTCCC
TAATAAAGAACTGCTCAAGCAACGTCTCTCCCGGTTGATTTGGCCGGAAAGCGGCAGGCA
CGTATTTGACAGCAGCACCGTGGATGCTGCAGCACAAAAGGTTGTCTCTCGTATGCTGAT
TCAGATGACGGAACCTTCGGCTGGGGCGGAAGTTATTACCGACGATAATATGATTGTAGA
ATACAAATACGGCAGAGGGATTTAACCGTCTTAAAGGGTTTCAGGCAACGCAGGTTTTAG
GTAACGTCCTGCTAGTTCAAAAAAACCGCATCACAGCAGTCGGGACAAAATGGTTTAAAC
ATTTTGTCCCGAATTCTTATTCCTATATATAGTGGATTAACAAAAATCAGGACAAGGCGA
CGAAGCCGCAGACAGTACAAATAGTACGGAACCGATTCACTTGGTGCTTGAGCACCTTAG
AGAATCGTTCTCTTTGAGCTAAGGCGAGGCAACGCCGTACTGGTTTTTGTTAATCCACTA
TACCACGAATTACGGTGTAAAAATTTATATGACCTTATAAAATCAAATAAGAATCGTTAT
CATAACATGATTGTATTTATTGGGTTTTTTTGGGCGTTTTGCCGATATTTACCTTTTAAT
GGTTTTTGAAATTCGCTAAAATACGAAATTATTGTAGAAATTTTGTTAACGGATTTGGGT
GTAACCATGTTGTCCGCTTACTTTCCCGTCTTTGTCTTTATCCTCATCGGCCTCGCGGCC
GGCGTGCTGTTTATCCTGCTCGGCACGATTTTAGGCCCGAAACGCCACTATGCCGAAAAA
GACGCGCCTTACGAATGCGGTTTTGAAGCTTTTGAAAACGCCAGGATGAAGTTCGACGTG
CGCTATTACCTCGTCGCCATCCTCTTCATCCTGTTTGATTTGGAGGTCGCGTTTATGCTG
CCGTGGGCAGTCGTGTTCAAAGATTTGGGCGCGTACGGCTTCTGGTCTATGCTGGTGTTT

ATCGTTGTTCTGACGGTAGGCTTTGTTTACGAATGGAAAAAAGGTGCGCTGGAATGGGAA
TAGAAGGCGTTTTGAAAAAAGGTTTCATCACCACCAGCGCGGATACGGTGCTGAACTATA
TGCGTACCGGTTCGTTGTGGCCGGTTACTTTCGGCTTGGCCTGCTGCGCCGTGGAAATGA
TGCACGCGGGTATGGCGCGTTACGACCTTGACCGTTTCGGTATTATTTTCCGTCCGTCCC
CCCGTCAGGCCGACCTGATGATTGTGGCGGGTACGCTCACCAATAAAATGGCGCCCGCCC
TGCGCCGAGTGTACGACCAGCTCGCCGAGCCGCGCTGGGTATTGTCTATGGGCTCATGTG
CCAACGGCGGCGGCTATTATCACTATTCTTATTCCGTTGTGCGCGGTGCCGACCGCGTCG
TGCCGGTAGATGTTTATGTGCCGGGTTGTCCGCCGACTGCGGAAGCCCTGATTTACGGCC
TGATTCAGCTCCAACAAAAAATCAAGCGCACTTCCACCATTGCGCGTGACGAGTAAGGAG
AGGACGATATGGCAAGCATTCAAGACTTATACGAAACCGTCAGCCGCGTTTTGGGCAATC
AGGCAGGCAAAGTCATTTCCGCTTTGGGCGAGATTACCGTCGAGTGTCTGCCCGAGCACT
ATATTTCAGTCATGACCGCATTGCGTGACCATGAAGAGTTGCATTTCGAGCTTCTGGTTG
ACTTGTGCGGTGTCGATTACAGCACTTACAAAAACGAAGCATGGCAGGGCAAACGCTTTG
CCGTCGTCAGTCAGTTGCTTTCCGTTAAAAACAATCAACGCATCCGCGTGCGCGTCTGGG
TTTCAGACGACGACTTCCCCGTAGTCGAATCTGTAGTCGATATTTACAACAGCGCGGATT
GGTACGAACGCGAAGGCTTCGATATGTACGGCATCATGTTCAACAACCATCCGGACTTGC
GCCGCATCCTGACCGATTACGGCTTCGTCGGACATCCGTTCCGCAAAGACTTCCCGATTT
CCGGCTATGTGGAAATGCGTTACGACGAAGAGCAAAAACGCGTGATTTACCAACCTGTTA
CCATTGAGCCGCGCGAGATCACGCCGCGTATCGTCCGTGAGGAGAACTACGGTGGCCAAT
AAATTAAGAAACTACACCATCAACTTCGGCCCGCAACACCCTGCGGCGCACGGCGTATTG
CGTATGATTTTGGAGCTGGACGGCGAACAAATCGTCCGTGCCGACCCGCATATCGGCCTC
TTGCACCGAGGTACGGAAAAACTGGCGGAAACCAAAACCTATCTGCAAGCCCTGCCCTAT
ATGGACCGCTTGGAGTATGTTTCCATGATGGTCAATGAGCAGGCGTATTGTTTGGCAGTA
GAAAAACTTGTCGGTATCGATGTGGCCATCCGCGCCCAATACATCCGCGTGATGTTTGGC
GAAGTAACGCGCATCCTCAATCACTTGATGGGCATCGGTTCGCATGCCTTCGACATCGGC
GCGATGACCGCCATTCTTTACGCCTTCCGCGACCGCGAAGAGCTGATGGACTTGTACGAA
GCCGTGTCCGGCGCGCGTATGCACGCCGCCTACTTCCGTCCCGGCGGCGTTTACCGCGAC
CTGCCCGACTTTATGCCCAAATACGAGGGCAGCAAATTCCGCAATGCCAAAGTATTGAAG
CAGCTCAACGAATCGCGCGAAGGCACCATGCTCGACTTTATCGATGCCTTCTGCGAACGC
TTCCCGAAAAATATCGACACACTCGAAACCCTCCTGACCGACAACCGTATTTGGAAACAG
CGTACCGTCGGCATCGGCGTCGTCTCCCCCGAACGTGCCATGCAAAAAGGCTTTACCGGC
GTGATGTTGCGCGGTTCGGGCGTGGAATGGGACGTGCGTAAGACACAGCCTTACGAAGTG
TACGACAAAATGGATTTCGACATCCCTGTCGGCGTGAACGGCGACTGCTACGACCGCTAC
CTCTGCCGTATGGAAGAAATGCGTCAATCCGTACGCATCATCAAACAATGTTCCGAGTGG
TTGCGTGTGAATCCGGGTCCGGTCATTACCACAAACCACAAATTCGCTCCGCCCAAACGT
ACCGAAATGAAAACAGGTATGGAAGACCTGATTCACCATTTCAAACTCTTTACCGAGGGT
ATGCACGTTCCCGAGGGCGAGACCTACACCGCTGTCGAACATCCGAAAGGCGAGTTCGGC
GTTTACATCATTTCAGACGGCGCAAACAAACCCTACCGCCTGAAAATCCGCGCACCCGGC
TTCGCCCATCTGCAAGGCATGGACGAAATGGCAAAAGGCCACATGCTCGCCGACGTCGTT
GCCATCATCGGTACGCAGGACATCGTATTCGGGGAGGTTGACCGATAATGTTATCCGCAG
AATCTTTAAAACAAATCGACATCGAGTTGGCAAAATATCCTGCCGACCAACGCCGCTCCG
CGATTATGGGCGCATTGCGTATTGCCCAAACCGAAAAAGGCTGGCTTGCTCCCGAGACCA
TCGCTTTTGTCGCCGACTACATCGGCATCACGCCTGCACAAGCCTACGAAGTCGCCACTT
TCTACAATATGTACGACCTTGAGCCTGTCGGCAAATACAAACTGACCGTTTGTACCAACC
TGCCCTGCGCCCTGCGCGGCGGTATGGCTACCGGCGAATACCTCAAACAAAAACTCGGTA
TCGGCTACGGCGAAACTACCCCTGACGGCAAGTTTACCCTTGTCGAAGGCGAATGCATGG
GCGCATGCGGCGACGCTCCCGTTATGCTGGTCAACAACCACAGCATGTGCAGCTTTATGA
CCGAAGAAGCGATTGAGAAGAAACTGGCGGAGTTGGAGTAGGTCGTCTGAAACGACGATT
TAAAGGTAGGTCGGATACTTGTAGCCGACAGAGTGGGTAAAAAGGCAAAATGTCGGATTT
AAGAATCCGCCCTACTGAAATACCGAAATGCCGTCATTCCCGCGCAGGCGGGAATCCACC
GGTAAGATTCGGTTTCTGAATTTAATAAGACATTGCTTACCATTGAGGATGGATTCCCGC
CTGCGCGGGAATGACGACAGACAAGCAAGTGGTCGAGATCCAACAAAAACGATTAAAGGT
CGTCTGAAAATATCGATTTGATAAACTAGATTTTATTTCAGACGACGTTACAAGCCGGTA
CACAAAGACATCTTAAGGTCGTCTGAAACAGCGGCCGCAACCGATACGAAAACAAACAGG
CACACCAAAAATGGCTATTTACCAATCAGGCGTGATTTTTGACCAAGTGGATACCGCCAA
TCCCGATTGCTGGACATTGGACGAATACGTCAAACGCGGCGGCTATACCGCCCTGCGTAA
AATTCTGTCCGAAAACATCTCGCAAACCGATGTGATTGACGAAGTCAAAACCTCCGGTTT
GCGCGGGCGCGGCGGTGCGGGCTTCCCGACCGGTTTGAAATGGAGCTTTATGCCCCGTTC
TTTCCCGGGCGAAAAATATGTGGTTTGCAACACCGACGAAGGCGAACCAGGTACGTTTAA
AGACCGCGACATCATCATGTTCAATCCGCATGCCCTGATCGAAGGCATGATTATCGCCGG
TTACGCGATGGGCGCGAAAGCCGGTTACAACTATATCCACGGCGAAATTTTTGAAGGCTA
CCAACGCTTTGAGGCCGCTTTGGAGCAGGCGCGTGCCGCAGGCTTTTTGGGTAAAAATAT
TTTGGGTTCGGATTTTGAATTTGAACTCTTCGCCCACCACGGCTACGGCGCATATATTTG
CGGCGAGGAAACCGCATTGCTCGAATCGCTGGAAGGCAAAAAAGGCCAGCCGCGCTTTAA
GCCGCCATTCCCTGCTTCGTTCGGCCTGTACGGCAAACCGACTACCATCAACAATACTGA
AACGTTCTCCTCCGTTCCATTCATTATCCGTGACGGTGGACAGGCATTTGCCGATAAAGC
TATTCCGAATGCAGGCGGTACCAAATTATTCTGTATTTCCGGCCATGTCGAGCGTCCGGG
CAACTATGAAGTGCCATTGGGTACGCCGTTTGCCGAAGTCTTGAAAATGGCGGGCGGTAT
GCGCGGCGGTAAAAAACTCAAAGCCGTCATTCCCGGCGGTTCGTCCGCGCCCGTATTGCC
TGCCGACATCATGATGCAGACCAATATGGACTACGACTCGATCTCCAAAGCAGGCTCCAT
GCTCGGTTCCGGCGCGATTATCGTCATGGACGAAGACGTGTGCATGGTCAAAGCCCTTGA
GCGTTTGAGCTACTTCTACTACGACGAGTCTTGCGGCCAATGTACCCCCTGCCGAGAAGG
TACGGGCTGGCTTTACCGCATCGTCCACCGCATCGTAGAAGGCAAAGGTAAAATGGAAGA
TTTGGATTTGCTGGATTCCGTCGGCAACCAAATGGCAGGCCGCACCATCTGCGCCCTCGC
CGATGCTGCCGTCTTCCCCGTCCGCAGCTTTACCAAGCATTTCCGTGATGAGTTTGTGCA

TTACATCGAACACGGCGGGCCGATGAAAGAGCATAAGTGGGGAGGGTGGTAATGGTGGAA
GCTAAAATTTTTATTCTATACGGTGCAGCCAACAAAGGTAAGAGTACGACACTCAATACG
CTTTTTAATCAGATTTGTCGGAAATTTTCTAAATTTCTAGTCTTTTTTGAAAGACATGGA
AACGGCTTAGATTTTGTTGCAGTATTTGATCATGAAGGTCACAGAATTGGTTTTTATTCA
TCTGGTGATAATGAATACGAGGTTAGGGGAAATTTATACAAACTTTATTCGCATAATTGT
GATTTTATTTTTGGCACGTCAAGGACACGGGGTGGTAGTTGCGATGCAGTAGGATGTTAT
GCAGAGTTATTGCATGGCGATGTAAATATAATTAATTGGTGTGAAAAGTTTGAGCCTACA
GATGAAGACAATGAGCGTGCTGTTAAAGAGTTATTTAAGTCATTTAAAAATATAATAAAT
GAGTTATAGTTTTAGTTGGTTTTATATTGGTTAAAAGCAAAATGCTAAAAATTTAACTTT
GCCGTCATTCCCGCGTAGGCGGGAATCCATAGTGGAATTTACAGAACCCGATATTTGAAA
AGCAGTTGCCGAAATTCAAAAAATGGATTCCCGCCTACGCGGGAATGACGGCGGGAGTAG
GCAGATGTTTTCAGATGAAAACGGTTGTAAATGATATTAAAAAAGTTGTTGTTTATATTG
CAGGAAAAATGAATACGAAACCATCCGCTTACTAGACAACCTGCCGTATATATTTTGGCA
AACGGTAAAAATGGAACACTCTATATCGGTGTTACCATGAATTTGCCGGAAAGGGTTTGG
CAGCACAAAAACCATGTCAATATTGATGGCTTTACTGCCCGATATGATGTGCATGATTTA
GTTTGGTATCAGTTTTTTGAGAATATGCCTGAAGCAGTTGCCAAAGAAAAAACGATGAAA
AAATGGCGACGTGAATGGAAGATTAAACTGATTGAAGAACAAAATACTGAATGATTGGAC
TTGTCGGGCGTGTTGTTTGTTTAGTTTTATTTCTGGAACTTTAAAAACTGTCGTTATTCC
AGCCCCACCTACGCGCAGACAGGCTACGGCGGGAATCACCGCAAAAGTTAAGAAACCAAT
GTTTGAAAACAGTTACCGAAAACCCAAGAATGGATTCACGCCTGTGCGGGAATGACGGCA
AGGTGGCAGTAAACGTTTTAAACAGTATTGATTGTCAATGAAACTCAAAAGGCCGTCTGA
AACCCATTTTTCAGACGACCTCCATAAAAGATTATTTATCAAATACCCGTAACTAGGAAC
GAACCATGTTACAAATCGAAATCGACGGCAAACAAGTATCTGTGGAGCAGGGCGCGACGG
TGATTGAAGCCGCGCACAAGCTCGGTACTTATATTCCGCATTTCTGTTACCACAAAAAAC
TTTCCATCGCCGCCAACTGCCGTATGTGTCTGGTGAACGTAGAAAAAGCCCCAAAACCCC
TGCCTGCCTGTGCCACGCCGGTTACAGACGGCATGATTGTGCGTACGCATTCGGCAAAAG
CCCGAGAGGCGCAGGAAGGCGTGATGGAGTTCCTGCTCATCAACCATCCGCTTGATTGTC
CGACCTGCGACCAAGGCGGCGAATGCCAGTTGCAGGATTTGGCGGTGGGCTACGGCAAAA
CCACCAGCCGCTACACCGAAGAAAAACGTTCCGTCGTCGGCAAAGATATGGGGTCCTTGG
TTTCCGCCGAGGAAATGAGCCGCTGTATCCACTGCACCCGCTGCGTTCGTTTCACTGAAG
AAATCGCCGGTTTGCAGGAAATTGCGATGGTGAATCGCGGCGAACACTCCGAAATCATGC
CCTTTATCGGCAAAACGGTGGAAACCGAATTGTCGGGCAACGTCATTGATTTGTGTCCCG
TCGGCGCGCTGACCAGCAAACCGTTCCGCTTCAACGCGCGTACTTGGGAATTGAACCGCC
GCAAATCCGTTTCCGCCCACGATGCTTTGGGCAGCAACCTGATTGTGCACACCAAAGACC
ATACCGTCCGCCGCGTGTTGCCGTTGGAAAACGAAGCGATTAACGAATGCTGGCTGTCTG
ACCGCGACCGTTTCGCCTACGAAGGCCTGTATCACGAAAGCCGTCTGAAAAACCCGAAAA
TCAAACAGGGCGGCGAGTGGATGGACGTGGATTGGAAAACCGCGTTGGAATATGTCCGCA
GCGCGATTGAATGTATCGCCAAAGACGGCAAGCAAAACCAAGTCGGCGTTTGGGCGAACC
CGATGAATACGGTTGAAGAACTGTATCTGGCGAAGAAACTCGCCGACGGCTTGGGTGTTA
AAAACTTTGCAACCCGTTTGCGCCAACAAGACAAACGTCTTTCAGACGGCCTTAAAGGTG
CGCAATGGTTGGGACAAAGCATTGAATCTTTGGCTGACAACGATGCCGTATTGGTAGTCG
GTGCGAACTTGCGCAAAGAACAGCCGCTCCTGACTGCCCGCCTGCGCCGCGCCGCCAAAG
ACCGTATGGCATTGAGCGTATTGGCCAGCAGTAAAGAAGAATTGTTTATGCCGCTTCTGT
CTCAAGAAGCCGCACATCCCGACGAGTGGGCAGGCCGTCTGAAAAACCTGTCTGTCAATG
CGGAACACGCCGTTACCGCCAGCCTGAAAAATGCTGAAAAAGCAGCGGTGATTTTGGGCG
CGGAAGTGCAAAACCATCCTGATTACGCCGCGGTTTACGCCGCCGCGCAAGAGCTGGCTG
ACGCGACCGGCGCAGTGCTGGGCATTTTGCCGCAAGCCGCCAACAGCGTTGGTGCGGATG
TCTTGAATGTAAACTCCGGCAAGAGCGTTGTCGAAATGGTAAACGCGCCGAAACAGGCAG
TCTTGCTGCTCAACGTTGAGCCTGAAATCGATACGGCGGACGGTGCAAAAGCCGTAGCCG
CGTTGAAACAGGCAAAAAGCGTGATGGCGTTTACGCCGTTTGTCAGCGAAACGCTGCTGG
ACGTGTGCGACGTGTTGTTGCCGATTGCACCGTTTACCGAAACCTCAGGCAGCTTCATCA
ATATGGAAGGCCGTCTGCAATCCTTCCACGGCGTGGTACAAGGCTTCGGCGATTCGCGTC
CGCTGTGGAAAGTGTTGCGCGTATTGGGCAACCTGTTTGACCTGAAAGGTTTTGAATACC
ACGATACCGCTGCGATTTTGAAAGACGCGCTGGATGTGGAAAGCCTGCCGTCCAAACTGG
ACAACCGCAACGCATGGACAGGGGAGGGCGTTCAGACGACCTCAGACCGCCTCGTCCGTG
TCGGCGGCGTCGGTATTTATCACACCGATTCTATCGTGCGCCGTTCCGCACCGTTGCAAG
AAACCAGCCATGCCGCCGTGCCTGCTGCGCGTGTAAATCCAAATACATTGGCACGCTTGG
GCCTGCAAGACGGACAAACCGCTGTCGCCAAACAAAACGGCGCAAGCGTATCGGTTGCCG
TCAAAGCCGATGCCGGACTGCCTGAAAACGTGGTGCATCTGCCGCTGCATACCGAAAATG
CCGCGCTGGGTGCGTTGATGGACACTATTGAACTGGCGGGAGCTTGATTATGCAGGAATG
GTTCCAAAACCTCTTTGCCGCAACGCTCGGTCTGGGCGATTTGGGTATTACTGTAGGCTT
GGTGGTATCCGTCATCGTCAAAATTGTGATTATCCTGATTCCGCTGATTCTGACCGTCGC
CTACCTGACTTATTTCGAACGTAAAGTCATCGGCTTCATGCAGCTTCGCGTCGGTCCGAA
CGTAACCGGCCCGTGGGGTCTGATTCAGCCGTTTGCCGACGTGTTCAAACTCTTGTTTAA
AGAAGTAACCCGTCCGAAGCTGTCAAACAAAGCCCTGTTCTATATCGGCCCGATTATGTC
GCTTGCCCCGTCTTTCGCGGCGTGGGCAGTGATTCCGTTCAATGAAGAATGGGTGCTGAC
CAACATCAATATCGGTCTTTTGTACATCCTGATGATTACCTCGCTGTCGGTTTACGGCGT
GATCATCGCGGGCTGGGCTTCCAACTCCAAATATTCGTTCTTGGGCGCAATGCGTGCTTC
CGCGCAAAGCATTTCCTACGAAATCGCCATGAGTGCCGCGCTGGTGTGCGTCGTGATGGT
GTCGGGCAGCATGAACTTCTCCGACATCGTTGCCGCGCAGGCAAAAGGCATCGCAGGCGG
TTCGGTATTCTCTTGGAACTGGCTGCCGCTCTTCCCCATCTTCATCGTCTATCTGATTTC
CGCCGTTGCCGAAACCAACCGCGCACCGTTTGACGTGGCAGAGGGCGAGTCTGAAATCGT
TGCCGGTCACCACGTCGAATATTCCGGCTTCGCATTCGCGCTGTTCTTCCTTGCCGAATA
CATTTTCATGATTCTGATTGCCGCGCTGACATCGTTGATGTTCCTCGGCGGCTGGCTGTC
TCCCTTCCCGCAAAGCTGGGGCATTGTCGGTACGCCTTCCGCATTTTGGATGTTCGCGAA

AATGGCGGCGGTTCTGTACTGGTATCTGTGGATACGCGCCACCTTCCCACGCTACCGTTA
CGACCAAATCATGCGCTTGGGCTGGAAAGTGCTGATTCCGATCGGCTTCGCCTACATCGT
GATTTTGGGCGTGTGGATGATTTCACCGCTGAATTTGTGGAAATAAGTTTCAGACGGCAT
CTTGAGGCCGTCTGAACAAAGCGATTTTGAATACCTAACGAAATCCCTGTTTTGAGGGAA
CATAATATGGCTAACTTAGTAAAAACCTTTCTGCTTGGCGAATTGGTAAAAGGTATGGGC
GTAACGCTCAAAAACTTTTTCGCCCGCAAAGACACAATTTATTTCCCCGAAGAGAAAACG
CCGCAATCCGTGCGTTTCCGCGGTCTGCACGCGCAGCGGCGGTATCCGAACGGCGAAGAG
CGGTGTATCGCGTGTAAGTTGTCTGAGGCAGTGTGTCCGGCAATGGCGATTAACATCGAA
TCGGAAGAACGTGAAGACGGTACGCGCCGCACCAAGCGTTACGACATCGACCTGACCAAG
TGCATCTTCTGCGGTTTCTGCGAAGAGGCATGCCCGACTGATGCGATTGTGGAAACCCAT
ATTTTTGAATACCACGGCGAGAAAAAAGGCGACTTGCACATGACCAAGCCGATTCTTTTG
GCCATTGGCGACAAATACGAAGCTGAAATCGCCAAACGCAAAGCCGCTGACGCGCCGTAT
CGTTAATGCTTTGGGGCTTCTTGGAAGGTTTTAAATATGGAAGGACTGATTAATGCATTG
AAATATTTAGCCGAACATGAGCCAATAGATAATTTTGAAGAAATTAGAACTAGAAATAGT
CCGATTGAGTTGCCAAGTGGATTAAGTAATTTTGAACAAAATATTTTTTTAAAAGAAAAT
TTATCCCCAAAATTACAAAATGATGATAGCTTGAAGACGCATTATTGGATTATCCGTGAA
TGGGGTGGGATTAAAAGTTTTAAACAATCTGCTGAAAATAGCCAGCTTATTCGTCAATTT
TTATCGGAACTTAATTCCGGAAAATTGAGTAGTGGTTTGTTGAAAATTTCATCATTATCT
AAATTGGCTTCTTTTATAGATTGTGAGCGATTCGCCATTTATGATTCACGCGCTATTTTT
TCGTTGAATTGGTTGTTGTTTAAATTTACAAATGCAGATTTGTTTTTTCAGCCACAAGGT
AGAAATAGGGAACTAGAAATCCGAAATATGAACGTATTGTTTCATTTTTCTGATATCAAA
CCGAATTATCGGAAACCAGACGTTTCGTTTCATCAATATTGTGGGTTGTTACAAGATTTG
GCGAAACAAGTTTATGGTAAACAAGCAAAACCGTATCACATAGAAATGTTGTTATTCAAA
ATTGCGACAACGTGGATTTGTGCGGATATGGATCAACTGATTAAGTTTGATTGTTTGCGT
AACCAGGATTTTCAGACTGCTTGAAACCATATTTTTGATTAATAAAGAAAGCATAGACTA
TGACTTTCCAACTGATTTTATTTTATATTTTTGCAGTGATAATTCTTTATGGCGCGCTCA
AAACCGTCACCGCTAAAAACCCTGTTCACGCCGCTTTGCATCTGGTGCTGACCTTCTGCG
TGAGCGCGATGCTTTGGATGCTGATGCAGGCTGAGTTTTTGGGCGTGACGCTGGTGGTGG
TTTACGTCGGCGCCGTGATGGTGTTGTTCCTGTTCGTCGTGATGATGTTGAACATCGACA
TTGAAGAAATGCGTGCCGGTTTCTGGCGGCACGCGCCTGTTGCCGGTGTGGTCGGCACAT
TGTTGGCGGTTGCGCTGATCCTGATTCTGGTCAACCCGAAAACCGACCTTGCCGCATTTG
GTCTGATGAAAGACATTCCTGCCGATTACAACAATATCCGCGATTTGGGCAGCCGTATTT
ATACCGACTATCTGTTGCCGTTTGAATTGGCGGCGGTATTGCTGTTGTTGGGTATGGTGG
CGGCGATTGCGCTGGTTCACCGTAAAACGGTTAATCCGAAACGCATGGATCCTGCCGACC
AAGTCAAAGTACGCGCCGACCAGGGCCGTATGCGTCTGGTGAAAATGGAAGCGGTCAAAC
CGCAAGTCGAATCTGCCGAAGAAAGCGAAGTTTCAGACGACCTCAAGCCGAAAGAGGAGG
GCAAAGCATGATTACCTTGACGCATTATTTGGTATTGGGTGCGCTCCTGTTCGGTATCAG
CGCAATGGGTATCTTTATGAACCGCAAAAACGTGCTGGTATTGCTGATGTCGATCGAGCT
GATGCTTTTGGCGGTGAACTTCAACTTTATCGCCTTCTCGCAACATTTGCGCGATACTGC
CGGACAAATTTTCGTATTCTTCGTATTGACCGTTGCCGCTGCCGAATCTCCCATCGGTTT
GGCGATTATGGTGCTGGTGTACCGCAACCGACAAACAATCAACGTTGCCGATTTCGACGA
GTTGAAAGGGTAAAGGTAGGTTGGGTCGAGACCTGACAAGACACCGATGCCGTCTGAAAA
CCCGATAGGAAAAACGATGAAATCCATAGACGAACAAAGCCTGCATAATGCCCGCCGCCT
GTTTGAAAGCGGCGACATCGACCGTATCGAAGTCGGTACCACCGCGGGCCTGCAACAGAT
TCACCGTTACCTGTTCGGCGGCTTATATGATTTTGCGGGTCAAATCAGGGAAGACAACAT
TTCCAAAGGCGGTTTTCGTTTTGCCAACGCCATGTATTTAAAAGACGCTTTGGTTAAAAT
CGAGCAGATGCCCGAGCCGACTTTTGAAGAAATCATCGCCAAATATGTTGAAATGAACAT
TGCCCATCCGTTTTTGGAGGGTAATGGCAGAAGTACCCGCATCTGGCTGGATTTGGTGCT
GAAAAAAAACCTGAAAAAAGTCGTGAACTGGCAAAATGTAAGTAAAACCCTGTATTTGCA
GGCGATGGAACGCAGCCCCGTCAACGATTTAGAACTGCGCTTTCTGTTAAAGGACAACCT
GACTGACGATGTGGACAACCGTGAAATCATCTTTAAAGGTATCGAGCAGTCGTATTATTA
CGAAGGGTATGAAAAAGGCTGAGGGTCGTCTGAAAAGCGATTTCAGACTGTTTCAGACGA
CCTGATTCGGTAGGTGATCAGACGGGAGCGGATGAGAAAAGAAATTCTGGGTAAGAATAA
TCCGGTCTGAAATATTGGAAGAAGAATGATGGATAAAAATCAGTTAGAACAAGAATTTCA
TAAAGCCATGTTAAATATTTATCAGGAGGCTTTGAATTTGCCGCAACCTTACAAGGCGAC
ACGATTTTTACAAATTGTAAATGAATTTGGTGGTAAAGAGGCGGCGGATAAATTATTGAG
TACGGGGGAAAAGAAGACTCAGACCGGTTTTACAGAGCTGATTTTGAGTGGTGGCGGAGT
CCACGCCTTGAAATACAGTATGGAATATCTGGTGTTACAAAAGCCGTGGTGTGATTTATT
TACTGAAGAGCAATTAGCTGTGGCACGCAAACGATTGGAGCGTGTTGGATTTGTTTTTCC
GAAGTAATTTTGTACGAAACAAACATAGATTTTTAAATCAATCGGATTCAATCAAATGAA
CGATATGACTTTATATTTGATAATTGCCCTTGTTCCGTTGGCAGGCTCGCTGATTGCGGG
TTTGTTCGGCAACAAAATCGGACGTGCCGGTGCGCATACGGTTACGATACTCGGCGTGGC
GGTGTCCGCCGTGCTGTCGGCTTATGTGCTGTGGGGCTTTATTGACGGCAGCCGCGCCAA
GTTTGACGAGAATGTCTATACCTGGCTGACAATGGGCGGCTTGGATTTCTCCGTCGGCTT
CTTGGTCGATACGATGACGGCGATGATGATGGTCGTGGTAACGGGCGTGTCGTTGATGGT
GCATATCTATACCATCGGCTATATGCACGATGAAAAAGTCGGCTACCAACGCTTCTTCAG
CTATATTTCTTTGTTTACATTCAGTATGTTGATGCTGATTATGAGCAACAACTTCATTCA
GCTCTTCTTCGGTTGGGAAGCGGTGGGCTTGGTGTCGTATCTCTTGATCGGTTTCTATTT
CAAACGCCCGAGCGCGACATTTGCCAACCTGAAAGCCTTTTTGATCAACCGTGTCGGCGA
CTTCGGCTTTTTGCTCGGTATCGGCTTGGTGCTTGCCTATTTCGGCGGCAGCTTGCGCTA
TCAAGATGTATTCGCTTATCTGCCCAACGTGCAAAATGCCACTATCCAACTGTTCCCCGG
TGTGGAATGGTCTTTGATTACTGTAACCTGTTTGCTCCTGTTTGTCGGTGCGATGGGTAA
ATCGGCACAATTCCCGCTGCACGTCTGGCTGCCTGATTCGATGGAAGGCCCGACCCCGAT
TTCTGCATTGATTCACGCCGCAACCATGGT-TACCGCCGGTTTGTTTATGGTGTCGCGTAT
GTCGCCGATTTATGAAATGAGCAGCACCGCGCTGTCGGTCATTATGGTGATCGGCGCGAT

TACCGCCCTGTTTATGGGCTTTTTGGGCGTGATTCAAAACGACATCAAACGTGTAGTTGC
GTATTCCACCCTGTCGCAATTGGGCTACATGACCGTGGCTCTGGGCGCGTCTGCCTATTC
CGTGGCGATGTTCCATGTGATGACCCACGCCTTCTTTAAAGCCCTGTTGTTCTTGGCGGC
AGGCAGCGCGATTATCGGTATGCACCACGACCAAGACATGCGCCATATGGGCAATCTGAA
AAAATATATGCCGGTTACTTGGCTGACCATGCTGATCGGTAACTTGTCGCTGATTGGTAC
GCCGTTCTTCTCCGGCTTCTACTCCAAAGATTCGATTATCGAAGCGGCGAAATACAGCAC
ACTGCCGGGCAGCGGCTTTGCCTATTTTGCCGTCCTCGCCAGCGTGTTTGTTACCGCGTT
TTACGCGTTCCGCCAATACTTTATGGTGTTCCACGGCGAAGAGAAATGGCGCAGCCTGCC
CGAACACCATTCAGACGGCCACGGCGAAGAACATCACGGTTTGGGTAAAAACGACAATCC
GCACGAAAGCCCGTTGGTGGTTACCCTGCCTTTGATTTTGCTTGCCGTTCCGTCCGTCAT
CATCGGCTACATCGCCATCGAACCCATGCTCTACGGCGATTTCTTCAAAGACGTGATTTT
CGTCAACGCCGACGCGCATCCGACTATACACATCATGAAGGAAGAGTTCCACGGCGCATT
GGCAATGGTGTCCCACAGCCTGCATTCGCCCGTACTCTACCTTGCTATCGCAGGCGTGTT
GAGCGCATGGCTTTTGTACGTCAAACTGCCGCACCTGCCAGCGAAAATTGCACAGACGTT
CCGTCCGATTTACGTTTTGTTTGAAAACAAATACTACCTCGACGCCCTGTATTTCAACGT
TTTCGCCAAAGGCACACGCGCATTGGGCACTTTCTTCTGGAAAGTCGGCGATACCGCCAT
TATTGACAACGGTATTGTCAACGGCTCTGCCAAACTGGTCGGCGCGATTGCCGCGCAAGT
GCGTAAAGCCCAAACCGGCTTTATCTACACCTACGCCGCCGCTATGGTGTTCGGCGTATT
GGTCTTGCTCGGCATGACCTTCTGGGGATTGTTCCGATAAGAATAAGGTTTCAGACGGCC
TTAAACCTTCAGGCCGTCTGAAACGAAGAAATATCCACATAAACACATTTTTATTTTAAC
CACAGGTTAACCACTATGTTTTCCAACTACCTACTCAGCTTGGCAATATGGATACCCATC
GCCGCAGGCGTGCTGGTTTTGGCAACGGGGTCGGACAGCCGTGCGCCGTTTGCCCGCGTG
CTCGCCTTCATGGGTGCGCTTGCCGGTTTCTTGGTAACACTGCCCCTGTTTACCGGTTTC
GACCGTTTGAGCGGCGGCTATCAATTTACCGAGTTCCACGAGTGGATTCCGCTTCTGAAA
ATCAACTACGCATTGGGCGTGGACGGTATTTCAGTGCTCTTTATCATCTTGAATGCGTTT
ATTACGCTGTTGGTGGTATTGGCAGGTTGGGAAGTCATTCAGAAACGTCCGGCGCAGTAT
ATGGCGGCATTCCTGATCATGTCGGGTTTGATTAACGGCGCGTTTGCCGCGCAGGATGCG
ATTCTGTTTTATGTGTTCTTCGAGGGTATGCTGATTCCGCTGTACCTGATTATCGGTGTA
TGGGGCGGTCCGCGCCGCGTCTATGCGTCGGTCAAGCTCTTCCTCTACACGCTGATGGGT
TCGCTCCTGATGCTGGTTGCGATGGTTTACCTTTATTATCAAACAGGCAGCTTCTCTATT
GTCGATTTCCAAAACATCGAACAGATTCCGTTGGGCGTACAACAGCTTTTGTTTGTGGCG
TTCTTCCTGTCATTTGCCGTAAAAGTGCCGATGTTCCCTGTGCACACTTGGTTGCCGGAT
GCCCACGTTGAAGCGCCGACCGGCGGTTCGATGGTGTTGGCGGCCATTACGCTGAAACTG
GGTGCGTATGGTTTCTTGCGCTTTATCCTGCCGATTATGCCGGATGCGGCACGCTATTTT
GCCCCCGTGATCATCGTATTAAGTCTGATTGCCGTGATTTATATCGGTATGGTGGCTTTG
GTGCAAACCGATATGAAAAAACTGGTGGCGTATTCGTCCATCAGCCATATGGGTTTTGTA
ACGCTTGGGATGTTTTTGTTTGTTGACGGGCAGTTGGACGACTGGGCATTGAAAGGTGCA
ATCATTCAAATGATTTCGCACGGTTTCGTGTCTGCCGCGATGTTTATGTGTATCGGCGTG
ATGTACGACCGCCTGCACACGCGCAATATTGCTGATTATGGCGGCGTGGTCAATGTGATG
CCCAAGTTTGCGGCGTTTATGATGCTGTTCGGTATGGCGAACGCGGGTTTGCCTGCGACT
TCCGGCTTCGTGGGCGAGTTTATGGTGATTATGGGCGCGGTCAAAGTGAATTTCTGGGTC
GGCGCGTTGGCCGCCATGACCCTGATTTACGGTGCATCTTATACCCTGTGGATGTACAAA
CGCGTTATTTTTGGTGCGATCCACAATCCGCACGTTGCCGAAATGCAAGACATCAATTGC
CGCGAATTTGCGATTTTGGCAATTTTGGCGGTGGCTGTTTTGGGTATGGGCCTGTATCCG
AACGCATTTATCGAAGTGGTGCATCAGGCGGCAAACGATTTGATTGCCCATGTGGCACAA
AGCAAGATTTGAGGTGTGTAAATGAACTGGTCTGATTTGAATTTAATGCCCGCCATGCCC
GAAATCGTGCTGCTGTCGCTGCTGGTGTTATTGTTGCTGGCGGACTTGTGGGTCAGTGAT
GACAAACGCCCGTGGACGCATTACGGCGCGTTGGCAACGGTGGCGGTTACGGCTGTGGTG
CAGTTGGCGGTGTGGGAACAGGGCAGCACGTCTTCGTTCAACGGGATGTATATTGCAGAC
GGTATGTCGCGTTTGGCAAAAATGGTTTTATATGCCTTGACCTTTGCCCTGTTTGTCTAT
GCCAAGCCCTACAACCAAGTGCGCGGTATTTTTAAAGGCGAGTTTTACACCCTGTCATTG
TTTGCCCTGTTGGGTATGAGTGTGATGGTGAGCGCGGGGCATTTTTTAACTGCCTATATC
GGTTTGGAACTCTTGTCGCTTGCCCTTTACGCCCTGATTGCCCTGCGCCGCGATTCCGGC
TTTGCCGCCGAAGCCGCCTTGAAATATTTTGTTTTGGGCGCGCTGGCATCCGGCCTGCTG
CTCTACGGTATTTCTATGGTTTACGGCGCAACCGGTTCGCTGGAATTTGCCGGCGTGCTC
GCCTCTTCCTTCAATGAAGAAGCCAACGAATGGCTGTTGAAACTGGGTTTGGTGTTTATC
GTCGTCGCCGTCGCGTTCAAACTCGGTGCGGTGCCGTTCCATATGTGGGTGCCCGACGTG
TATCACGGCGCGCCCACTTCTGTTACCGCCTTGGTCGGCACTGCCCCGAAAATCGCCGCC
GTCGTTTTCACTTTCCGCATCCTCGTTACCGGGCTGGGAACCGTGCATCATGACTGGTCT
CTGATGTTTGCCCTGCTTGCCGCCGCCTCGCTGCTGGTCGGCAACCTTGCCGCCATCATG
CAGACCAATATCAAACGTATGTTCGCCTATTCCACCGTATCGCATATGGGTTTCATCCTG
TTGGCGTTTATGGCGGGCGCGGTCGGCTTTGCGGCGGGCCTCTATTACGCCATTACCTAC
GCGCTGATGGCGGCGGCAGGGTTCGGAGTGTTGATGGTGTTGTCGGACGGGGACAACGAG
TGCGAAAACATCAGCGATTTGGCAGGGTTGAACCAACACCGCGTATGGCTTGCCTTTTTG
ATGCTGCTGGTTATGTTCTCTATGGCGGGCATTCCGCCGCTGATGGGTTTTTACGCCAAA
TTCGGCGTGATTATGGCACTCTTGAAACAAGGCCATGTTTGGTTGTCTGTATTTGCCGTC
ATCATGTCGCTGATTGGTGCGTTCTACTACCTGCGCGTGGTCAAAGTCATCTACTTCGAT
GTGCCTGATCATGACCAGCCGGTCGGCAGCAACTATGCCGCCAAATTTGTTCTGACGGTC
AATGCCTTCTTGCTGCTCCTGTGGGGCATCATGCCGCAAACCGTTATCGACTGGTGCGCC
AAGGCGTTGGAGAACACGCTGTAAGCCGCCGCAACGGCAGCCGTGTCAGAGGCTGCCGTT
TTTGTTAAGATATGCCGTTCCGCAACGCGGTTCAGACGGCATCGCCGCCGACAACGCCTA
AACAGAAAGCCCACCATGACCGCATCCATGTACATCCTTTTGGTCTTGGCACTCATCTTT
GCCAACGCCCCCTTCCTCACGACCAGACTGTTCGGCGTGGCCGCACTCAAGCGCAAACAT
TTCGGACACCACATGATCGAGCTGGCGGCAGGTTTCGCGCTGACCGCCGTTCTTGCCTAC
ATCCTCGAATCCCGTGCAGGATCGGTACACGATCAGGGTTGGGAGTTTTATGCCACAGTC

GTCTGCCTGTACCTGATTTTTGCGTTTCCATGTTTTGTGTGGCGGTATTTTTGGCACACG
CGCAACAGGGAATAGACAAGCATAGGAATGCCGTCTGAAACCCTTTCAGACGGCATTTGT
TTCATTCAAGTGCAGGCCGGCATCGCTGTGCCGGCACGTTTCAGCCGGCGATATACGCCG
GTTTTAATATTTGCGGGCGACTGCAAATTCTGCCAACTGCCGCAGGCGCAGGGCTTTGTC
GCCGAAGGGTTCGAGCAGCGCGACCGCTTCGGCAACCACTTTCTGTGCGTATGAGCGCGC
CGCTTCCAAGCCCATCAGTTTCACATAAGTCGGCTTGTCGTTGTCTGCGTCTTTGCCCGC
CGTTTTGCCCAAAGTCGCCGTGTCCGCTTCACAATCCAACACATCGTCAATGACTTGGAA
CGCCAGCCCCAGTTTTGCCGCGTAAGCGTCCAATACGGAAAGTTCCGCATCTGACAGATC
AGGACACGCCGTCGCCCCCAATAAAACCGCCGCACGGATTAGCGCACCCGTTTTCAGGCT
GTGCATCTGTTCCAAATCGGCTTGAACCATTTGTTTGCCGACATTCGCCAAATCGATTGC
CTGACCGCCCGCCATACCCCTGCTGCCGCCCGCTTTCCCCAACACCGACAACATTGCCAA
CTGGCGTGCGGCGGGCAGTTCTGTCGGACGGCTCAACACGTCAAATGCCTGTGTCTGCAA
AGCGTCGCCGGTCAGAAGGGCGGTCGCTTCGCCATATTTGATGTGGCAAGTCGGTTTGCC
GCGCCGCAGGCTGTCGTTGTCCATCGCCGGCATATCGTCGTGAACCAAAGAATAGACGTG
GATCATTTCGATTGCCGCCATTGCCTGTTCTACTGCTTCATGCACGGCTTCGCCTAATTC
CGAAGCTGCCAGAACCAGCATCGGCCGCAGACGCTTACCGCCGTCCAAAGCCGCATAACG
CATCGCTTCGTGCAGTGTGTGCGGTATTTCCCCCTCACACGGTAAAAACCGTTCAAGCAG
CAGCTCTCTTTGCCCCTGCGCCCTCTGTTGCCACGTTTTCAAATCATTCGTCGGATTCAA
GGTTTAACTCCTTCAGCCCGTCTGTGTCTAAAACCTGTAGCTTTTGTTCGACTTGTGCCA
GTTTGGTTTGGCAGTACCTGACCAGTTCGTTGCCTTCCTGATAGGCGGCAAGCGCGTCTT
CCAAGGGCATTTCGCCCTGCATAGACTGCGTCAGCGATTCGAGGCGCGACAAGGCTTCTT
CAAACGATTTCGGGGCGTTTTTCTTCATCGTATTTCCTTTTCGGTTGAAACCCCGCCCTT
TAGGGCGGCAGGATCAGACTTTATTTGGGAGGGGTGTAACCCTTTCCAAATCAGGGCAAT
ACATAGGGCGGTGCTTTATGTGCCGTCCTGTGTGTTGGAACATAGTTTCGGATGTTCCGG
TAAAAAGCGGATTGTAGCATTTTTGAAAAACGGATGCCGTCTGAAACCCGAATCCGGCTT
CAGACGGCATTTTTTCCGCCCAGGCGGCAAGGCGTTACCCGGGCAGTTCGTCGGTGATGC
CCTGCAAAAAGGCGAGGCGTTCGGGGCTTGCCGCCCCGGTTTGCGCGGCGGCTTTGAAGG
CGCAGCCGGGTTCGGCGCGGTGGGTGCAGTTGTGGAAGCGGCATTGCCCGACAAGGTGGC
GGAAATCGGGGAAATAGCGCGGCAAATCGGCGGCTTGCAGGTCGTGTAAACCAAATTCTT
GCAAACCCGGGGAGTCGATGAGTTGGGTTTCGCCGTTCAAATCATAAAGCCGGGCGTGGG
TGGTGGTGTGTTTTCCCGAGTCGAGTGCGGCGGAAATGTCGCCGGTGCGGGCGGTTTGGC
TGCCCAAAAGGGCGTTGGTCAGGGTGGATTTGCCCATACCGCTCTGCCCGAGCAGGATGT
TGCTGTGCCCTTGCAGGGCGGGGCGCAGGCTGCCGGCGTTTTCCAGTGCGCGGGTTTCGA
TGACGGGATAACCCAGCGTTTCGTAGAATTTGAGTTTTTCGCGCCAAAGGGCGGTTTCGG
GCAGGTCGGCTTTGTTCAGGACGATGACGGCTTCAATACCGGCGGCTTCGGCGGCAAGCA
GGGCGCGTTGCAGCAGCCCCACCCTCGGACTCGGGACCCCGGCGGTTACGATGAGGAGTT
GGCTAACGTTGGCGGCGATGAGTTTGGTTTTCCACGCGTCTTGGCGGTAGAGCACGCTTT
GGCGCGGTAAAAAATCTTCAATCACAACTTGTTCGGCGTTGACGGGGCTGATGCGGACGC
GGTCGCCGCAGGCGAAATCGACGCGTTTTTTGCGGGTGCTGGCTTCGTAGGTTGTGCCGT
CGGGCGTGCGGACAATGTAGCGGCGGCCGTAGCTGGCGGTAATTTGGGCGGTGTCGTTCA
TGGTTTCTTTGGGGTTGGGTGTGGGAATGCCGTCTGAAAACGGGTGTTCGGACGGCATCG
GTTCAGTCGTGCTGCCACTCGACGTGTTCGTTGAGGAAGCCGCCGCTCTGGTGCGCCCAG
AGTTTGGCGTAAAGCCCGCGTTTTTCGAGGAGTTCGGCGTGTGTGCCTTCTTCGATGATG
CGGCCTTTGTCGAGGACGACGAGCCTGTCCATTGCGGCGATGGTGGAGAGGCGGTGGGCG
ATGGCGATGACGGTTTTGCCGTCCATCATTTTGTCGAGGCTTTCTTGGATGGCGGCTTCG
ACTTCGGAATCGAGCGCGCTGGTGGCTTCGTCCAAAAGAAGAATCGGTGCGTCTTTGAGC
ATCACGCGGGCGATGGCGATGCGCTGGCGTTGCCCGCCGGAGAGTTTCACGCCGCGTTCG
CCGACGTGTGCGTCGTAGCCGCGCCGCCCTTTGCCATCGGAAAGGTCGGGGATGAACCCG
GCGCCTTCCGCGCGTTCGGCGGCAGAAACCATTTCGGCATCGGTCGCGTCGGGGCGGCCG
TAAATAATGTTGTCGCGCACGGAACGGTGCAGCAGCGAGGTATCTTGCGTGACCAAACCG
ATTTGGGCGCGTAAAGATTCTTGGGTAACGCCGCTTATGTCCTGCCCGTCGATCGAAACC
GTGCCGCTTTGCGGTTCGTAGAAGCGCAAAAGCAGGTTGACGATGGTGGATTTGCCCGCG
CCGCTGCGTCCGATCAAGCCGACTTTTTCGCCCGGGCGGATGCTGAGGTTGAAGCCGTTG
AGCAGCGGTTTGCCCGCTTCGTAGGAGAAATCGACGTGTTCAAATTTGATTGCGCCTTGC
GGCACGTTCAGCGGCAGTGCCCGGGGCTTGTCGAGGATGGTGTGCGGTTTGGACAGGGTT
GCCATGCCGTCGCCGACGGTGCCGATGTTTTCAAACAGCCGCGCGGATTCCCACATAATG
TATTGCGACAAACCGTTGACGCGCAACGCCATGGCGGTGGCTGTAGCAACCGCGCCCACG
CCGACCTGCCCGTTGTGCCAGAGCCAGATGCCCAGTGCGGCGGTGGAGAGGGTCAGGGAG
GTGTTGACGATGAAGCTGCACGAATGCAGCAGCGTCGCCAGCCGCATTTGGGCGCGCACC
GTAACCATAAATTCTTCCATCGACTGCTTGGCATAGGCGGCTTCACCCGCGCCGTGGGAG
AAGAGTTTGACGGTGGCGATATTGGAATAGGCATCGGTAATGCGGCCGGTCATCAGCGAG
CGGGCATCCGCCTGCCATGCGGCGGTTTGCCCCAATTTGGGAATCAGCAGGCGCATCACC
GAAGCGAAACCGACAATCCAGCCGATAAAGGGCAGCAGCAGCCATGAGTCGAGCGAGGCG
AGAATCACGCCGGAGGTAATGAAATACACCGACACATAAACGACCATATCGGCAACCGTC
ATCACCGCGTCGCGCAACGCCAGCGCGGTCTGCATGACTTTGGCGGACACGCGTCCGGCA
AATTCGTCCTGATAAAAACCGAGGCTTTGGTTCAGCATCAGGCCGTCCAAGTTCCAGCGC
AGGCCCATGGGGAACACGCCCTGAAGGGTTTGCAGGCGCACGTTGGACGCGGCAAACGCC
CACGCAACCGAAAATACCATCATCGCCGCCATTGCCGCCAGTTCCCAACTTTTTTCGGCA
AACAGTTCGGCGGGCGCGTATTTGCCGAGCCACTCCACGATTTTGCCCATAAATTGAAAA
ACCAGGGCTTCCATAATGCCGATGCCGGCGGTCAGCGCAGCCAGGGCGGCTATCCATTTC
CGCACGCCGGCCATGCTGCTCCAGACAAACCGCCACAAGCCTTTTTCTGGCGTTTTCGGG
GCGGCTTCGGGATAAGGGTCGATTCGGGACTCGAACCAGGAAAATATTTTGTTCAACATT
GTTTTCGATTTCGGTAAAACAGTTTCAGACGGCATCAAACACAATGCCGTCTGAAACGAA
GGACAATAACGCCATTTTACGGGAAAAGCCGTCGGGAAGACAGCGCGAGGCGGAAACGCA
GGGTTTCGTCAGGGCAAACGCCGCGCCGCCTTCAGGCGGCATTATTTCAGCAGGTTTTTC

AAAGCAAGGCGCACGCCTTCGCCCACGTCCGTCCCCTCCGGAACGCCTTTGACCGCCGCT
TTTGCTTCGCGTTCGCTGTAACCCAGCGCAAGCAGCGTGCTGACGATGTCTTCCGTTTCG
TCGGCGGCGGGTGCGGCGGCAAACAGCCCGTCCGTTACCGTATGCGCGACCAGCTTGCCG
CGCAGTTCCAAAACCATACGTTCGGCGGTTTTTTTGCCGATTCCCGGGGCGGAGGAGAGG
CGTTTGACATCTTCTTCTGCAACCGCCCGCGCCAGTTCGTCGGCAGTCATTGCCGACAAA
ATGCCCAAAGCCGTTTTCGCGCCGATGCCGCCGACCTTGATCAGTTGGCGGAAGGTCTTG
CGTTCTTCCGCAGTGGCAAAACCAAATAAAAGATGTGCGTCTTCCCGAATGATAAGCTGG
GTAAACAGTTGTACGCTTTCACCCACGGGCGGCAGGTTGTAGAAGGTCTGCATCGATACG
TCGGCCTCATAGCCGACACCGTTGACATCGATGACGATTTGCGGAGGGTTTTTTTCAACC
AGTTTGCCGGTCAGTCTGCTGATCATGTGTGCCGAATCCTGAAGTGTCGGGTGCAAAATG
CCGTCTGAAACCGGTTTGGGCTTCAGACGGCACGGATTGTATCAAATTCAGTCGTCGCGG
CGGGAGGAAATCACGCGGCCGGTACGGGCATCGACAACGACTTTGTATTCCTGTCCGTTT
TTGACGATTTCGACATCATAGTGCGGACGGCCGTTGTCGTGTTCGAGATCGATGTCGGTG
ATTTTGCCGCCGACACGCGCCAACGCTGCTTTTTCGGCTTGGGCGCGGCTGATGATTTTG
TCTTGTTTGTTGTGTTGGTGTGCGGCGTGTCCGTGGTCGTCATCGCCGTGTCCGTCGTGG
TGGGCGAGCGCGGGGGCGGAAATGCTCAGCAGTGCGGTTGCGGCGGAGGTCAAGAGAAGG
TGTTTGATGTTCATATTTTGCCTTTGTAAATCGTGGGTTGGAAAATGTGGATATTAATAA
GGTATCAAATAACCGTCAGCCGGCGGTCAATACCGCCCGAACCATACCGCGCGCCTGAGC
TTCGGCTTCGGCGGCGCGTTCCTGCGAGGTAAACGGTCCCATTTTGACGACGTATTCGTA
ACGGCGTTTTTCAACCGAGAGGTTCGTACCCGATGACGAAACGGCGAAGTTTTGGGCGGC
TTGGTTCAGATAGGCTTGTGCTTCGTGTTCCGTACCGAAAGATTTCAAGTCGATAAAGAT
GTCTTTGTTTTCGGCAACCGGTGCGGATTGGCCCGGGACGATTTGTTCGATTTTGACGTG
TGCCGTCCCTTGGTTGACAAAGCCCAATTTTTGCGCGGCGGCTTTGGATACGTCGATGAT
GCGGTTGCCGTGGAAGGGGCCGCGGTCGTTGACGCGGACGATGACGCTTTTGCCGTTTTT
GGTATTGGTTACGCGCACATAGCTGGGGATGGGCAGGGTTTTGTGGGCGGCGGTAAAGGC
GTTCATATCGTATCGTTCTCCGCCGGAAGTTTTGCGCCCGTGAAACCTGCCGCCGTACCA
CGAGGCGTTGCCGGTTTGCGTGAATTCGGCGACTTGGTTTTTCGGCGTGTAGCGTTTTCC
GGCGACTTTGTAGCTGCGGTTGGCGGAGGCGTGCAGTTTTTCTGCCTTGACCACTGCGTC
GGCGGATGCCGTCTGAAGGGAGTGTGTGCCGAATGCGGCGGTGAGAAGGAAAAGGGTTTT
TCGGGTTAAAGTCAAAACGTGTTCCGTTCTTGAGTTGAAGACGAATGGGCATCATGCCCG
CCGGATACGTTCCGAACCGCCGTACAGTGCGGACGGCGGTTCGGAATGTGTCCGGATAGG
TTTTCAGACGGCATGAACCTGCGTTCAAACGCCGCCTGCGTAACCGTGTTGCCGCCACGC
TTCAAAGAGAATCACGGCGACGGTGTTGGAAAGGTTCATACTCCGGCTGCCGGGCTGCAT
CGGCAGGCGGATTTTTTGCGCGGCGGGCAGGCTGTCGAGGATGTCGGCAGGCAGTCCGCG
CGTTTCCGGCCCGAACAGTAAAACGTCGCCTTTTTGAAACGCGGTTTCATCGGGGCGCGC
CGTGCCTTTGGTGGTCAGGGCGAAAATGCGCCTGCCTGCGAGTGCCTTGAGGCAGTCGTC
GAAGTTTTCGTGCACCGTCAGGCTGGCGAACTCGTGGTAGTCGAGCCCGGCGCGTTTCAT
TTTGGCGGAATCCAATGGGAAGCCGAGCGGTTTGACAAGGTGCAAATCCGCGCCGGTATT
GGCGCACAGGCGGATGATGTTGCCCGTGTTCGGCGGGATTTCCGGCTGGTATAAAACGAT
GGTAAACATAAATATCAATCACTTATAGGCGCGTAACCTTGCCACAAGGCGGATGGGGTG
TCAAAAAATTTAGTTATTTTTTCATTGGCGTGCGTGCCAGCGTCCAGCAGCAGATTCGGT
TTGCGCCCGATTTTTTCAGCGTCTTTGCCAATTCGTCCAGCGTCGCGCCGGTGGTAAAGA
CATCGTCGATTAACAGAATATTACAGTTTTCCGGTATCGGTGTGCGGATTTCAAAGGCGT
TTTTGATGTTTCGCCGCCGTTCGCCGCCTTTGAGCGTGCTTTGCGGCGGGCGGTGGTGTC
GGAAAACGGTGTGTCGGGGCAGTATCTGCCAGCCGTAGCGTTGTGCCAGCAGCCCGACGA
TGCTTTCACTTTGGTTGAACCCGCGTTGCAGCAGCCGCTCCCTGCTTAGCGGTACGGGCA
GGACGAAATCGAAACATTCGTCTGCAAGCCGGTCGGGCGGATTCTGCATCATCAGGTCTG
CCAGCGGCTGCACCATGCTCAAATCAGCCAAGTGCTTCAGCGCGTGTATCATATTGCTGA
CGGGCGGTTCGTAATGCAGCGAAGCCCACATCCGGTCGAATGCGGGCGGTTTTTTCTGAC
AGCCGCCGCACACCGATCCGCCTTGGATGTGTCTGAAACACAGGGGGCAGCTGTTTGCCG
CGTCGGTGCGGTATGCCGCCAAATCGTCGCGGCAGCCGGCGCAGATGCCGTCTGAAACGC
CAGACGAACCGTGGCATAATACGCAACGCCTGATAGTGGGCGCGTCTGCGATGCGCCGCC
AACGAGAGAGAAAATCCATGCCTGATGCCGTCAAAAAAGTTTACCTGATACACGGTTGGG
GGGCGAACCGCCACATGTTCGACGATTTGATGCCGCGCCTGCCTGCAACGTGGCCGGTGT
CCGCCGTCGATTTGCCCGGACACGGGGACGCTCCGTTTGTCCGACCTTTCGACATTGCGG
CTGCGGCCGACGGCATTGCCGCTCAAATTGACGCTCCGGCCGACATTCTCGGCTGGTCGC
TCGGCGGATTGGTCGCGCTGTATCTGGCGGCGCGCCATCCCGACAAAGTCCGTTCGCTCT
GCCTGACGGCGAGTTTCGCACGGCTGACGGCTGACGAAGACTATCCCGAAGGGCTTGCCG
CGCCTGCATTGGGCAAAATGGTCGGTGCGTTCCGTTCGGATTATGCCAAACATATCAAAC
AGTTTCTACAATTACAGCTTCTGCACACGCCTGATGCGGACGGAATCATAGGCAGAATCC
TGCCCGATTTGGCGCGCTGCGGCACGCCTCAAGCCTTGCAGGAGGCGTTGGACGCGGCGG
AAAGGGCGGATGCGCGGCATTTGTTGGACAAGATAGATGTTCCGGTACTGCTGGTGTTCG
GCGGCAAAGACGCGATTACGCCGCCGCGTATGGGTGAATATCTGCACCGCCGTTTGAAGG
GCAGCAGGTTGGTTGTGATGGAAAAGGCGGCGCATGCGCCGTTTTTGAGCCATGCGGAAG
CGTTTGCCGCGCTGTACCGCGACTTTGTTGAAGGGGGTTTGAGATGAACCATCAGGACGC
ACGCTGGCAGGTTCACCGCCATCTTGCCGAACATACCGACCAACGGCTGACACTCGTCCG
CAACGCGCCCAAGCATATCCTGCTTGCCGGTGCGGATGCGGACATCAGCCGCAGCCTGCT
GGCGAAACGCTATCCGCAGGCGGTATTTGAAGAATACGATTCCCGTGCGGATTTTTTGGC
GGCTGCCGCTGCCGCCCGCAAAGGCGGTTTTTGGCAAAGGTTTACGGGTAAGGGCGTGGT
GCAACACTGCCAATCCCCGATCGCGCCGCTGCCCGAAGCGTGTGCCGATATGTTGTGGTC
GAATCTCGGACTGTTGGCGGCGGAACAAATCCTTCCTGTGCTGCACAACTGGGCGCGCGC
CTTGAAGACGGACGGGCTGCTGTTTTTACCTGCTTCGGGCGAGATACCTTGGCGGAACT
GAAATGCCGTCTGAAAGAAAACGGCATTGAAAGCCGCAGCGCGCTTTTCCCTGATATGCA
CGACTTGGGCGATATGCTTGCTGAAAACGGCTTTTACGACCCCGTTACCGATACGGCGAA
GCTGGTGTTGGATTACAAAAAGGCGGAAACGTTTTGGGCGGATATGGACACGCTGGGCGT

TTGGCGGGCGATGGCGTGGAACGATGAAAACGCCGCGCGTTCGTGTGTCGGGACAATATT
TGAGCGGGAAGGCGGTTTGGGCATTACGCTGGAAACGGTGTACGGACACGCCGTGAAAAA
ACTGATGCTGCCGCAAGGGGAGAACGTGGTGCAGTTTTTTCCGAAGAGATGATGTGCAGA
TGCCGTCTGAAGCCGTTTCCAGGTTTCAGACGGCATTTGTCTGTGAAAACCGACAGAAAT
AAAGGAAATGCCGATGTATAGTGAATTAAATTTAAACCAGTACAGCGTTGCCTCGCCTTA
GCTCAAAGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATT
TGTACTGTCTGCGGCTTCGCCGCCTTGTCCTGATTTTTGTTAATCCACTATATGCTGATG
CCGGAGACGTATATTGCGTCTATAACATCAGACTGAAGCAGTACACTGCCTGCCAGGTTA
CCCGAGTTGAAGAACACGGTGGCAAAAAAAACACATGCGACCCTGCTGGCTTTGGACTGG
CAGGGCAACAAACCGCTTGGGGCGGAGGAGCTGGCGGATTTGAAATCGCTTTACAAAGAC
TTAAAGAATAATATTGGAAATATTGTATGAACAAAAAATTAAACTATATTTTTATGTTGG
ACTGTTTAGGGTTGGTGATATTGTTTACTTGTATAATAGCTACTTTTGAAAGAGATTATG
GATTTAAAATTTTTACTAATTCTAAGAGACCTGAATTTTATTATTGGATTGGAATGTTTT
ATTATGGAATTATTTCTTGCTGGTTTGATTATCAATTAATTTCAACAAAGGCGAATTCGT
ATAAAAGAAAAGTTAAACAATATAAAATTTTTTCAGTAATATTTTCAGTTTTGATATTTA
TTTCTACTATAGTAAAACTTTAAATTTTGGAGCAAAAATTTATGAGCGATTCAATTGAAT
ATGTATTGGGAACGCGGTCTGCACATGTATAAGGCAAGTGCCGTCGTGCCGACGGGATAT
GTACGGGTTGGGAATACCGCGCCGCTGGTCGGCGAAGACACGCAACGGTATGCCTCTTTT
TGGGGCGACGGCTACGACGTGTACCGTCAGTTGAGATGGCAGCAGATACCCGAAAAACAG
AGAAAGGCATTCAAAAAAGCCGCCAAAAGCAAAAAGACCGTGATGTTTGCCGGACGGGAA
TACGGCATATCCAAACAGAATTTGAGCGATGTTTGGGATGATTTTGAAGACGCGATGGAA
CTGAAGGCGTTTCCCTGCCTGTCTTCGCTGTTTCTGACCAAATGGCATAAAAATCTATAT
GATAGTGGATTAACAAAAACCAGTACGGCGTTGCCTCGCCTTAGCTCAAAGAGAACGATT
CTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATTTGTACTGTCTGCGGCTC
GCCGCCTTGTCCTGATTTTTGTTAATCCACTATAAAAACAGGAATTTTTAAATAGAGGCA
ATGCCGTCTGAAACTTGGTAACGGGCTTCAGACGGCATTTCGTTCCAATACCGCCAACAC
CGCCGCACCGTAACGTGCGGCTTTTTCTTCGCCTACGCCGTATACGGCGGCAAGCTCCGC
CAAGCCTTCCGGCTGTTTGGCGGCAATGGCGCGCAGTGCGGCTTTGCTGAGAATGCGGTA
GGGTTCGGACTGTTCGTGTTTTGCCGTTTCGCCGCACCATTGGATCAGGGCGCGCATCAG
GCGGCGTTTGCGTTTGGCGGTTTCATCGATGCCGTCTGAAAACGGACGGCAGACGGCGAG
GATGTCCCGTCCGTATTTGGCGGCGCGTACGCTGCCCAAGCCGTACACGCCTTCGAGGTC
GGTTTCGGTTTCGGGCGTATCGGCAAGCATATCGGCAAGGCTTTCGTCGGAGAGGACGGC
ATGCAGGGCGCAGTTTTCCGCCCTTGCCTGTTCATACCGCCAGGCTTCGAGTTTTTGACG
CAGTTGTTGTTCGCGTTCGGTTTGCGGACGGATGACCGCGTCGCGGCTGAAGCCGGCGGC
GTTGCGGCAGACTTCGAGGATGCCGTGTCCGAAACGGTCGATTTTGGCTTCGCCCAAACC
GTAGATGTCGTGCAGACCGTTGAGGTCTTGCGGCATTTTTTCGACAAGGTCGCGCAGGGT
TTTGTCGCCGAAAATCATATAGGCGGGGATGCCTTCGGCTTCTGCCTGTTTCATACGCCA
AACGCGCAATGCCTGCCACAGGCGTTCTTCGCGTTCGGTACGCAGCCAGTTGTCTTTGAG
GGTGCGGGCGGCGGGCTTGTCGCGCTTGAGCGGACGCAGCATCACTTCGGTTTCGCCTTT
GAGGACTTTTTTGGCGGCTTCGGTCAGTTGCAATGCCTGATATCGGGTAATGTTGACGGT
GAGGTAGCCGAGGCTGATACACTGGCGGATGACGCTGCGCCATTCTTTGTCGGACAACTC
CGTACCGATGCCGAATGTGGACAGTTGTTCGTGCCGGTTGCCGCGTATCCAATCGTCGCT
TTTACCTCGTAAAATGTTGGTGATGTAACCGGCGGCAAAACGTTGTCCGGCGCGGTACAC
GCAGCTGAGTAATTTTTGCACCAACACCGTGCCGTCAAACCGTACGGGCGGATGCAGGCA
GTTGTCGCAATGGCCGCAGGGTTCGGATGCTTCGCCGAAATGTTTGAGCAGCAGTACGCG
GCGGCAGGCGGCGGTTTCGCAGACGGCAAGCATGGCATCGAGTTTTTGCATTTCGATTTG
CTTTTGCACCTCGTCGCTGTTGCCTTCGGCAATCCGTTCGCGCAGCAACACCCAATCGTT
CAAACCGTAACACAGCCAGCTTGCGGCCGGCAGCCCGTCCCGTCCGGCGCGCCCCGATTC
TTGATAGAAATGTTCGACACTCTGGGGCATATCGAGATGGGCGACAAAGCGCACGTCGGG
TTTGTCTATGCCCATGCCGAACGCCACGGTCGCCACCACGATAATATTGTCTTCATGCGT
AAAGCGGCGTTGGTTTTCCTCGCGTACGTCCATGCTCAAACCAGCATGATACGGAATCGC
GTTTAATCCGTTTTCACGCAAAAACTGCGCCACATCTTCCACCTTTTTGCGGCTTAGGCA
ATACACAATGCCGCTTTGCCCCGTCATTTCTTTGCGGATGAAATCCAGCAATTGTTTTTT
GCCGTTGTTTTTTTCGATAACCTGATAATAAATATTCGGACGGTCAAAGCTGGAGACAAA
TTCGGGCGCATCGTCCAAGTGCAGATAATGCTTGATGTCGGCGCGCGTGGCGGCATCGGC
GGTAGCGGTCAGAGCGATGCGCGGGACGTTCGGATAGCGTTCGGCAAGCATGCCGAGCTG
TTGATATTCAGGGCGGAAATCGTGTCCCCATTGGCTGACGCAATGCGCCTCATCAATGGC
AAACAGACTGACGGTTTGTTGGTCGAGAAAACGCAAAAAGCGGTCGGTAACCAAGCGTTC
CGGCGCGACATAAAGCAGCTTCAGACGGCCTTGGGCAAGCCGGTCGGCAATCTCGCGCGC
CTCGTCTGCCGATGTGCCGCTGTTGACTGCCGCCGCTTCGATGCCGGCGGCGTGCAGGTT
TGCCACTTGGTCGTTCATCAGCGCAATCAGCGGCGATACGACAACCGCCACGCCTTCGCG
CATCAGCGCGGGAATCTGGTAACACAAAGACTTGCCACCGCCCGTCGGCATCAGCACCGT
CAAACTCCCGCCGCCTGCCAAAGTATTGATGACAGCCTCCTGCCTGCCGCGAAATTCGGG
ATAACCAAATACTTCGTGCAGAATCTGTTTGGCGGTCGGTCGGTGCATGATGGTTCCGTG
CTCGGTAAGGGTGTTGATCGGTCGGCGGCAATATGCCGTCTGAAATCGGGATTTAGAATA
GTTTGCCCACTTCTGCTTCAATATCGTCGGCACGCATAAACGTTTCGCCGATCAGGAAGG
TATGCACGCCGCGCGATTGCATAAATTCCACATCCGCCTTGCCTGTAATGCCGCTTTCGG
TAACGACGGTTTTGCCTTCCAGCGCGGGCAGCAGCGACAGGGTTTGGTCGAGGGAGACTT
CAAAAGTCCTCAGGTTGCGGTTGTTTACGCCCCACAGCGGCGTGGTCAGGTTGCGGCATT
TTTCCAATTCGGTTTCGTCGTGCAGCTCGAGTAGGACGGTCATGCCCAATTCGTGCGCCA
CCGCTTCAAAGCGTTCCAATTGTTCCTGTTCCAGTGCTGCGGCAATCAGCAGGACGGCAT
CCGCCCCCCATGCGCGCGCCTGATAAACCTGGTATTCGTCGATGATGAAGTCTTTGCGCA
GCACGGGCAGCGATACGGCTTCGCGCGCCTGTTTGAGGTATTCGGGCGAACCTTGGAAAT
AGGGTTCGTCGGTCAGTACGGACAAACACGCCGCTCCGGCGTTTTCATAGGCGCGTGCAA
TCTCGGCAGGGCGGAAGTCCGGACGGATTAACCCTTTGCTCGGGCTTGCCTTTTTGATTT

CGGCTATGACGGCGGGCAGGTTTAGGCGGTGTTTGCCGCGTATCGAATCGATGAAGCTGC
GGACGGGCGCGGCTTCTGCGGCAAGTGTGCGGATGTGTTCGGCGTTGACGGCGGCTTTTT
GAGCGGCAACTTCCTGTGCTTTGGTGGCAAGGATTTTATTGAGGATGTCGGTCATGTCGG
GTTCCGTATTCGTCTGGGGAAAGGGGGAATATTAGCATCAAACCGTTAACGCCTGTTTGT
GCGGAAGCTGTCGAAATAGGACAGGACGGTCTGCGGCAGCCATTGCAGGTGCAGCCTGCC
GCCGGTGCTGCTGACAAAGCCGACATGACCACCATATGCCGGCTGGAACAGGGTAACGGC
TTCGGATACTTCGTCTGCGCGGGGCAGGGCTTCGGGCGGCAGGAAGGGGTCGTTGACGGC
ATTGAGCAGGAGCAGCGGTTTGGCAACGTGTTTGAGCAGCGGTTTGCAGGAAGTTTGGCG
GTAGTAGTCGTGCCGGTCGGCAAAGCCGTGCAGCGGTGCGGTGAAGCGGTCGTCAAACTC
GCCCAGTGTTTTGCACCCTGCGGCAAATGCCGTCTGAAAACCTTGGAGCGATTTTGCTTT
GGGTATCAGGGTGCGGAGGAAGTAGCGCGTGTAGAGCAGCCGCGTGATGCCGCTGTCGAA
GCGTCTGCCTGCCGCCTCTGCATCGACGGGGGCGGAGATGACGGCAGCGGCTTGCGGCAA
TGCCTTTTTGCCCTGTTCGCCCAAATATTTTGCCAGCGCGTTGCCGCCCAGCGATACGCC
GACGGCGTATATTTCACGGTAACGCGCGGCGAACGTGTCCAAAGTAAAGGCGATTTCGGC
GGTATCGCCCAAGTGGTAGAACACCGGAGCGGTGTTGGCAATGCCGCCGCAGCTGCGGAA
ATGGACGACTACGCCGTGCCAACCCCGATCGCGTACCGCAAGCATCAGTTCGACCGCGTA
ATGGCTGCGGCTGCTTCCTTCCAAACCGTGAAACAGCACGACCAGCGGCGCATCGGGCGA
AATGCCGTCTGAAAAGTCGTAGGCGACTTTGGTTTTACCCGTGCTGTCGGGAAGCAGCTC
TCGGCGGTATGCGGGCGCGGGGCGTTGCAGGAATTTGGCGGCAATCGTGTCGGCATTGCC
GTTGCGGAGGAAAAAGGGCGTGTCCGGCGGTGTTAAAATCATAAGGTATCGGTTTTCTTG
TTTTCAGACGGCATTGATGATGCGGCAGCCCGTCCGGCTGGTGCGGACGTGGGGGATGCG
CGCCCGAATATAGGCGTGGAAAAGCGTTTGCCGAAAAAGGATATCGGCATCGGTCAGTTT
TCCACGCGTTTGAAATGGCGCGGACGGAAGCCCAAAGCCGCCAGTGATGCGAAATACAGT
CCGCCGCCGACGGCAATCAGGATGCAGAGCTGCCCCGCTTTCCGCATTCCGCCGGCGTGC
GCCCATTCAAACGGCAGGTAAGCCTGCGCTGCCCACAGTCCGCCGCACATCACGGCGAGC
GAGAGCAGCATTTTTGCTAAGAACGCTGCCCAACCCTTGCCAGGTTGGTAAATACCGTGT
CTGCGCAACAGGTAAAACAACAATCCGGCATTGATACACGCGCCCAGACCGATGGCAAGC
GAAAGTCCGACGTGTTTCAGTGGGCCGATAAAGGCAAGGTTCATCAACTGCGTGCAGATG
AGCGTGAAGATGGCGATTTTGACGGGCGTTTTGATGTTTTGCCGCGCATAGAAGCCGGGT
GCCAACACTTTAATCATGATTAAGCCGATTAAACCGAAAGAATAGGCAATCAGCGCGTGT
TGCGTCATCTGCGCGTCAAACAGCGTAAATTCGCGGTACATAAACAGCGTCGCCACCAGC
GGGAACGACAACACCGCCAGTCCGACCGCCGCCGGCAGCGTCAGCAGCATGCACAGGCGC
AAACCCCAGTCGAGCAGGGCGGAAAACTGTTCCGTATCTTGGTTTGCCGAGTGTTTGGAC
AAAGTCGGCAGCAAAATCGTACCGAGTGCCGCCCCCAGCACGCCGCTGGGCAGCTCCATC
ATGCGGTCGGCGTAATACATCCATGAAACGCTGCCCGATTGCAGATAAGACGCGAAAATC
GTGTTGATCACCAAAGAAACCTGCGCCACGCTCACGCCCAAAATCGCAGGCGCCATCTGT
TTCATCACGCGGTTGACCGCCGCATCTTTGAAACTCAGTTTGGGCAGTTTCAAAAAGCCC
AGTTTCGCCAGCCAGGGCAGTTGGAAGCCGAGTTGCAAAATGCCGCCGACAAAGACCGCC
CACGCCAGCGCGGTAACGGGCGGATCGAAATACGGCACGAAAAACAGCGCGAATACGATA
AACGACACGTTCAGAAACGTGGGCGTAAACGCCGGAATGCCGAACTTATGATAAGAATTG
AGTACCGAGCCGACAAATGAAGACAGGGAAATCAATAATATATAAGGAAACGTAATCCGC
AGCAAATCGATGGAGAGCTGAAATTTGTCGGCATCTTGGGCAAAACCGGGTGCGGAAACA
TAAATCACCCAAGGCGCGGCAAGTATGCCCAGCGCGGTAACGATAACCAGTACAAACGAC
AGCATCCCCGCCACATGGCGGATAAAAGCCTCCGCCGCCTCTTTTGAACGCGTTTCCTTG
TATTCCGCCAAAATCGGCACAAACGCTTGGGCAAACGCCCCCTCCGCAAACACGCGGCGA
AGCAGGTTGGGCAGTTTGAACGCGACAAAAAACGCATCCGTCGCCATACCCGCGCCGAAT
GCCCGCGCAATGACCGTATCGCGCACAAATCCCAAAACGCGCGACACCATCGTCAGGCTG
CCGACTTTTGCCAAAGCTCCCAGCATATTCATCATTGTTCCTCAACAGTCGTACCCGTCT
GGGGCAACGGCGCGTATTGTACGACAGAAACCGCTTCAGACGGCATCGGGTTTGATGCCG
TCTGAAGCGGTTTCCTGAAACGAAAACGTCCTTTTCCGGCGGCAAACTGTATCAATACGC
GGAAATGCAATAAAATAGCCGGATTCCGATTGATTTCCAACATCTGTTTCCAACATCACG
GAGAACCGTATGAAATCCAGACACCTTGCCCTCGGCGTTGCCGCCCTGTTCGCCCTTGCC
GCGTGCGACAGCAAAGTCCAAACCAGCGTCCCCGCCGACAGCGCGCCTGCCGCTTCGGCA
GCCGCCGCCCCGGCAGGGCTGGTCGAAGGGCAAAACTATACCGTCCTTGCCAACCCGATT
CCCCAACAGCAGGCAGGCAAAGTCGAAGTCCTTGAGTTTTTCGGCTATTTCTGTCCGCAC
TGCGCCCACCTCGAACCTGTTTTAAGCAAACACGCCAAGTCTTTTAAAGACGATATGTAC
CTGCGTACCGAACACGTCGTCTGGCAGAAAGAAATGCTGACGCTGGCACGCCTCGCCGCC
GCCGTCGATATGGCTGCCGCCGACAGCAAAGATGTGGCGAACAGCCATATTTTCGATGCG
ATGGTCAACCAAAAAATCAAGCTGCAAAATCCGGAAGTCCTCAAAAAATGGCTGGGCGAA
CAAACCGCCTTTGACGGCAAAAAAGTCCTTGCCGCCTACGAGTCCCCCGAAAGCCAGGCG
CGCGCCGACAAAATGCAGGAGCTGACCGAAACCTTCCAAATCGACGGTACGCCCACGGTT
ATCGTCGGCGGTAAATATAAAGTTGAATTTGCCGACTGGGAGTCCGGTATGAACACCATC
GACCTTTTGGCGGACAAAGTACGCGAAGAACAAAAAGCCGCGCAGTAAGCCCGTTTGAAA
AATGCCGTCTGAAACTTGGTTTTCAGACGGCATTTTGATTGGGTTTAAAACGTAAAGCCC
GTTTCCAGTTCTTCATCGCCGACCAGTTCGACCAAGAGCGCGTAGAGCGGGGCGAGTTCG
GCATAACGGCGCGATACGCGGCGCAGATAGTTTAAGAAACGCGGGATTTCCGGACGGTAT
TTGTCTTTGCCGTCGCGGTAGTACAGGCGTGCGAAGATGCCTGCAACCTTCAAGTGCCGC
TGCACGCCCATCCATTCGAACCAGCGGTAAAACTCGTCAAACGCTTCGGGGACGGGCAAG
CCGGCAGCCCGCGCCTTTTCCCAGTAGCGGATAACCAAGTCCAAGACAAATTCTTCTTCC
CATTCGATAAAGGCATCGCGCAACAGCGACACCAAATCGTAGGAAATCGGGCCGTAAAGC
GCGTCTTGGAAGTCTAAAACGCCCGGCCTGCCGCGCGTCAGCATCAGGTTGCGGACGATA
AAGTCGCGGTGCACATAGACTTTGGGCTGCGCCAACAGGGGCGGCAGCAGCGTATCGACG
GTTTGCTGCCAAAGTTGGCGTTGTTTGAATGTTAATTCGCGCCCCAATTCTTTTGCGACA
AACCATTCCGGGAACAGGTTGATTTCGCGCAACATCGTTTCACGGTCATATTCGGGCAAA
ACCCCTTCACGGCTCGCCTTCTGCAATTCGACCAACTCGCCGATTGCCTCCAAAAGCAGG

GCTTTGTGCGCCGTTTCGCCCTGTTCCTGAAGCATTGCGGTCAAAAACGTCGTATTGCCC
AAGTCGTTCAATACCACAAACCCCAGATCCGTGTCCGCGTGCAATACCTGCGGCACATTG
ACCATGTCAAACAGTTTCTGCACTTTCAAATAAGGTGCGACACTCATCTTGTCGGGCGGT
GCATCCATGCAGACGACACTGCTGCCGTCTGAAAACGTTGCACGGAAATACCGGCGGAAA
TCAGCATCCGCCGCCGCAAAAGTCAGATCGAAGTCCCGTTCGGGATAAACGGTCTGAAGC
CAATTTTTCAGTTTGATTTGTCGTTGCATAACAGTACTAAAGCATTTCAGGTTACAATAA
ACGCTATTCTAACTGGCAAACCGACTTGAGGGGCGATTTTGGCTCGTTTATTTTCACTCA
AACCACTGGTGCTGGCATTGGGCCTCTGCTTCGGCACGCATTGCGCCGCCGCCGATGCCG
TTGCGGCGGAGGAAACGGACAATCCGACCGCCGGAGAAAGCGTTCGGAGCGTGTCCGAAC
CCATACAGCCTACCAGCCTGAGCCTCGGTTCGACCTGCCTGTTTTGCAGTAACGAAAGCG
GCAGCCCCGAGAGAACCGAAGCCGCCGTCCAAGGCAGCGGCGAAGCATCCATCCCCGAAG
ACTATACGCGCATTGTTGCCGACAGGATGGAAGGACAGTCGCAGGTGCAGGTGCGTGCCG
AAGGCAACGTCGTCGTCGAACGCAACCGGACGACCCTCAATACCGATTGGGCGGATTACG
ACCAGTCGGGCGACACCGTTACCGCAGGCGACCGGTTCGCCCTCCAACAGGACGGTACGC
TGATTCGGGGCGAAACCCTGACCTACAATCTCGAGCAGCAGACCGGGGAAGCGCACAACG
TCCGCATGGAAATCGAACAAGGCGGACGGCGGCTGCAAAGCGTCAGCCGCACCGCCGAAA
TGTTGGGCGAAGGGCATTACAAACTGACGGAAACCCAATTCAACACCTGTTCCGCCGGCG
ATGCCGGCTGGTATGTCAAGGCAGCCTCTGTCGAAGCCGATCGGGAAAAAGGCATAGGCG
TTGCCAAACACGCCGCCTTCGTGTTCGGCGGCGTTCCCATTTTCTACACCCCTTGGGCGG
ACTTCCCGCTTGACGGCAACCGCAAAAGCGGCCTGCTTGTTCCCTCACTGTCCGCCGGTT
CGGACGGCGTTTCCCTTTCCGTTCCCTATTATTTCAACCTTGCCCCCAATCTCGATGCCA
CGTTCGCGCCCAGCGTGATCGGCGAACGCGGCGCGGTCTTTGACGGGCAGGTACGCTACC
TGCGGCCGGATTATGCCGGCCAGTCCGACCTGACCTGGCTGCCGCACGACAAGAAAAGCG
GCAGGAATAACCGCTATCAGGCGAAATGGCAGCATCGGCACGACATTTCCGACACGCTTC
AGGCGGGTGTCGATTTCAACCAAGTCTCCGACAGCGGCTACTACCGCGACTTTTACGGCA
ACAAAGAAATCGCCGGCAACGTCAACCTCAACCGCCGTGTATGGCTGGATTATGGCGGCA
GGGCGGCGGGCGGCAGCCTGAATGCCGGCCTTTCGGTTCTGAAATACCAGACGCTGGCAA
ACCAAAGCGGCTACAAAGACAAACCGTATGCCCTCATGCCGCGCCTTTCGGTCGAGTGGC
GTAAAAACACCGGCAGGGCGCAAATCGGCGTGTCCGCACAATTTACCCGATTCAGCCACG
ACAGCCGCCAAGACGGCAGCCGCCTGGTCGTCTATCCCGACATCAAATGGGATTTCAGCA
ACAGCTGGGGCTATGTCCGTCCCAAACTCGGACTGCACGCCACCTATTACAGCCTCAACC
GCTTCGGCAGCCAAGAAGCCCGACGCGTCAGCCGCACTCTGCCCATTGTCAACATCGACA
GCGGCGCAACTTTTGAGCGGAATACGCGGATGTTCGGCGGAGAAGTCCTGCAAACCCTCG
AGCCGCGCCTGTTCTACAACTATATTCCTGCCAAATCCCAAAACGACCTGCCCAATTTCG
ATTCGTCGGAAAGCAGCTTCGGCTACGGGCAGCTCTTTCGCGAAAACCTCTATTACGGCA
ACGACAGGATTAACACCGCAAACAGCCTTTCCGCCGCCGTGCAAAGCCGTATTTTGGACG
GCGCGACGGGGGAAGAGCGTTTCCGCGCCGGCATCGGTCAGAAATTCTATTTCAAGGATG
ATGCGGTGATGCTTGACGGCAGCGTCGGCAAAAAACCGCGCAACCGTTCCGACTGGGTGG
CATTTGCCTCCGGCAGCATCGGCAGCCGCTTCATCCTCGACAGCAGCATCCACTACAACC
AAAACGACAAACGCGCCGAGAACTACGCCGTCGGTGCAAGCTACCGTCCCGCACAGGGCA
AAGTGCTGAACGCCCGCTACAAATACGGGCGCAACGAAAAAATCTACCTGAAGTCCGACC
GTTCCTATTTTTACGACAAACTCAGCCAGCTCGACCTGTCCGCACAATGGCCGCTGACGC
GCAACCTGTCGGCCGTCGTCCGTTACAACTACGGTTTTGAAGCCAAAAAACCGATAGAGG
TGCTGGCGGGTGCGGAATACAAAAGCAGTTGCGGCTGCTGGGGCGCGGGCGTGTACGCCC
AACGCTACGTTACCGGCGAAAACACCTACAAAAACGCTGTCTTTTTCTCACTTCAGTTGA
AAGACCTCAGCAGTGTCGGCAGAAACCCCGCAGACAGGATGGATGTCGCCGTTCCCGGCT
ATATCACCGCCCACTCTCTTTCCGCCGGACGCAACAAACGACCCTGACCGTCGGAAACCT
GGCAGGAGCACCGTTCCCGCACAAGACGGCATTCCACCGACAACCCCAAACCCGCCATCA
AAGGCAGGATTCAAACGATAAGGAAAGAATGATGAAAATCAAAGCCCTGATGATTGCCGC
CGCATTGCTGGCAGCAGCCGATGTCCACGCCGCACCGCAAAAGGCAAAAACCGCATCCGC
CAAAGCTGCCAAAGCTGCCAAAGCTGCCAAAGTTGCCAAAGTTGCCAAAGTTGCCAAAGT
TGCCGCCACGGCGCAAAAAGAAGCCGCACCCGCACAACAGCAGGGCGGTATCCGCTTTTC
AGACGGCATTGCCGCCGTTGCCGACAACGAAGTCATCACGCGCCGCCGGCTTGCCGAAGC
CGTTGCCGAAGCCAAAGCCAACCTGCCCAAAGACGCGCAGATAAGCGAATCCGAGCTGTC
CCGACAGGTGCTGATGCAGCTTGTCAACCAATCCCTGATTGTACAGGCGGGCAAACGCCG
CAACATTCAAGCAAGCGAAGCGGAAATCGATGCCGTCGTCGCAAAAAATCCCGCCCTCAA
AAACCTCAGCCCCGCCCAACGCCGCGATTTTGCCGACAACATCATTGCCGAAAAAGTCCG
CCAGCAGGCAGTGATGCAGAACAGCCGCGTGAGCGAAGCTGAAATCGATGCCTTCCTCGA
GCAGGCGCAAAAACAAGGCATCACCCTGCCCGAAGGCGCACCGTTGCGCCAATACCGCGC
CCAACACATCCTGATTAAAGCCGACAGCGAAAACGCCGCCGTCGGCGCGGAAAGCACCAT
CCGCAAAATCTACGGAGAGGCCCGCAGCGGCACAGACTTTTCCAGCCTGGCGCGCCAATA
TTCGCAAGACGCGAGCGCGGGCAACGGCGGAGATTTGGGCTGGTTTGCCGACGGCGTGAT
GGTTCCCGCCTTTGAAGAAGCCGTCCACGCGCTCAAACCCGGACAGGTCGGCGCGCCCGT
CCGCACCCAATTCGGCTGGCATATCATCAAATTGAACGAAGTGCGCGATGCCGGCACACC
TCAGGAACGTATCCGCAATTCCGTGCGGCAATACATCTTCCAACAAAAAGCCGAACAGGC
AACCGTCAACCTGTTGCGTGACCTGCATTCCGGCGCGTATGTCGACATCCGCTAAGGCGG
TTTGAAGCAAAAAGCCATACCGATCGGCAAAAATCCGGGCGGTATGGCTTTTTGGATTTC
GAGTTACTTTTACACCGTCATTCATCATTCCCGCGAAAGCGGGAATCTAGAAACGAAAAG
TAACAGGAATTTATCGGGAATGGCTGGAGTTTAAAGGACTGGATTCCCGCCGTCGCGGGA
ATGACGGGATTTTGGGTTGTGGTAATTTATCGGAAAAACAAAAAAACCTATGCCGTCATT
CCCGAGCAGGCGGGAATCCGGTTATTTAAAACTGCAGAAATTTATCCGAAGCAACAACAA
TCTTTCCATCGTCATTCCCGCGTAGGCGGGAATCTAGGACGTAGAATCTAAAGAAACCGT
TTTATCCGATAAGTTTCTGTACCGAAGAATCTGGATTCCCGCTTTCGCGGGAATGACGGC
GCATAAGTTCCCGTGCGGACAGACCTAGATTCCCACCTGCGTGGGAATGACGATTCAGAA
GTTGCCTGAAACCTAAAAAACTGAAACCGAACGAGCCGGATTTCCGCTTTCGCGGGAATG

ACGGGATTTTGGGTTGTGGTAATTTATCGGGAAAACGGAAACCCCTATGCCGTCATTCCC
GCGCAGGCGGGAATCTAGGACGTAGAATCTAAAGAAACCGTTTTATCCGATAAGTTTCTG
TACCGAAGAATCTGGATTCCCGCTTTCGCGGGAATGACGGCGTATAAGTTCCCGTGCGGA
CAGACCTATATTCCCACCTGCGCGGGAATGACGATTCAGAAGTTGCCCGAAACCAAAAAA
CTGAAGCCGAACGGTCTGGATTCCCGCTTTCGCGGGAATGACGGCGCATAAGTTCCCGTG
CGGACAGACCTAGATTCCCACCTGCGTGGGAATGACGATTCAGAAGTTGCCCGAAACCAA
AAAACTGAAGCCGAACGGTCTGGATTCCCGCTTTCGCGGGAATGACGGCGCATAAGTTCC
CGTGCGGACAGGCCTAGATTCCCACCTGTGTGGGAATGACGATTCAGAAGTTGCCTGAAA
CCTAAAAAACTGAAACCGAACGAGCCGGATTCCCGCTTTTACGGGAATGACGGGATTTTG
GGTTGTGGTAATTTATCGGGAAAACGGAAACCCCTATGCCGTCATTCCCGCGCAGGCGGG
AATCTAGGACGTAGAATCTAAAGAAACCGTTTTATCCGATAAGTTTCTGTACCGAAGAAT
CTGGATTTCCGCTTTCGCGGGAATGACGGCGCATAAGTTCCCGTGCGGACAGACCTAGAT
TCCCACCTGCGTGGGAATGACGATTCAGAAGTTGCCTGAAACCTAAAAAACTGAAACCGA
ACGAGCCGGATTTCCGCTTTCGCGGGAATGACGGGATTTTAGATTGCGGGTATTTATCGG
GAACGGCGGCTTGGAAGTTCATTGAAACGGAAAAACAACGGAAACCCAAAAAACCGGATT
CCCGACTGTGGGAATGATGAGATTCAGGTTTCTGTTTTTGCCGGAGTTTGCCGTATCGGG
CTTCAGACGGCATTGCCTGCCGTTGTACCCGCGGGTGCGACTGCCTTGATGTAGTTGAGC
GAGACAAACTGCTTCTCGGCATCCAATTCGGTGATTTTGAACAATGCCTGTGATTTGGGC
AGTGCGTCAAACGGAATACCGGTCGCGCGCGTGACCAGCGGCAGGCCTTCGATGCGGACG
AGGTCTTCTTTGAGGATGGTCGCGGTCAGCTCGCTTGTACCTTGCTGTTGCAGGTACACA
AGGCTCCAGTAGGCTTCCATCTGCCGTTGGAAATCGGCGTAGGCGGTATAGGCGGCATCA
AAGTCGCGCAGTGCGGCGAAAAGCTCGGCATCGCTGTTTTGATACAGCGGCTCGGCAGTG
TCGTCTATCAGGCTGATCAGCTGCTTTTGGTTGATGTAGTCGGCGGCGCGGCGCAGCGGC
GAGGTAAACCAGCCGTAATGCTGCACGCCCATGCCGATATGCGGCTCGGATTTGGTGCTC
ATGCGTACTTTTCCGGTGGGTTGGACGCGGAAGAGGCCGGGCAGGTCGTTGTCATGGAGC
ATTTGTGCCCAAGTGCTGTTGGCAAGAATCATCATCTCGCTGACCAGCGTATCGATGGGT
GAGCCGCGTTCGCGGCGGACGACGGATACCTTGCCTTCCTCATCCAATTCGATGCTGTAA
TCGTATTGCGGCGCGCGGTCGGGTTCGTATTTGCCGCGCGCTTTTTGCAGGGCGGTGGCG
AATTGATAGAACCAAATCAGGTCTTGATGGTGGGCGAACATCATTTCGCCGGCTTCGTCC
AAGCCGGTTTCGGCGTTGAAATGCGGCTCGATGGCTTGGATACGCAGGTTTGTGGCGATG
TTGACCGCTTCGATTTTGCAGGTCGGCGCGCCGACGTTGAACTCGCCGTCCACATCGAAA
TAAATGCTGACGGCAGGGCGGTGTGCGCCTGCATCAAGGCTGAACGCGGCAATCCAGTTT
TCGGGCAGCATCGTGATTTTGCCGCCGGGGAAATAAACCGTGCTCAAGCGTTCCATGATG
TTTTTTTCCATTTTGTCGCCCGGTTTAACGGCAAGTGACGGCGCGGCGATGTGGATGCCG
ACACGCTTCGTGCCGTTGTCCAAGTCGGTCAGGCTTAAAGCGTCGTCCACTTCGGTGGTT
GATTCGTCGTCAATGGAAAAGGCGGTAACGTCGGCCTTGGGCAGGTCGGGCATTTCGGGA
AGGGCAAGGTCGGGGAAGCCTGTTCCTTTAGGGAAGTATTTGATTTCAAACCCGTCTTGC
AGGTATTGGGGAATGGACGTAATGCCGCCCGTTTTTTTCGCCAATTCGTAGGCAGAGGTT
TTCAGCGCGTCGGCGGCTTTGGTAAAGGCTTTGTAGGTCAGCGACTGCTTGTCGGGCGCG
TGCAGGATGGTTTTCAAATCCGCCGCGATTTCAGACGGCATCTCGCCGCGTTTCAAGGCT
TCTGCCCAAGCGTCGATTTGCGCGTCTTGCTGTTTTTTGCGTTCGATGGCGGCAAGTGCT
TGTTTTAAAGTTTCTTCGGGCGCGGCTTTGAACACGCCTTTGGCTTTTTTGTAGAAATAC
ATCGGCGCGGCGTAAAGCGCAATCAAAGTTGCCGCCAGCTCGGTTTTGGTCGGCGCATGG
CCGTAATATTCTTCGGCGATGGCTTCGGCGGTAAATTCCTCTTCGCCGCATACTTCCCAC
AATAAATCGGTGTCGATGTCCGCCGCCTGTGCCTGCGCGTTTTCCAAAAACGCCGCCATA
TCGCCGTCAAACTCGGCAAAGACGTTGTTCGCCTTCACTTTGGTGCGTTTGCCGTGTGGG
GTATCGACTTGGTAGGTGGCATCGTTTTTTTGGATGATGGCGGCGATTTTGAATTGGCCG
GACTCTTCGTAAAAAATATTCATTTTTCGGATTTTTCTGTGGAAACTCAAGCGGGCGATT
TTAGCAGATTACCGAAAATGCCGTCTGAAAAAAGGTTGGGAGAGGGTTGGCGCGGCTTTG
CGGTGCTTGCGTTATAGTGGATTAACAAAAACCAGTACGGCGTTACCTCGCCTTAGCTCA
AAGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATTTGTAC
TGTCTGCGGCTTCGTCGCCTTGTCCTGATTTTTGTTAATCCACTATACGTTTTTGACGGT
GTACAATCGCTGTTTTTGAACGGAGGATGGAATGGAGAATACAAACCGTGTGCCGGAGCA
GGCACGTTATGATGCCGAACGCAGGCAGGCAGACGAAGCATTGGCGGGCGTGTTTCCGGC
AGTCAGTATCTTCGGCAGCGCGCGCACGCCGCAGAATCATGCGGATTATGCGTTCGCCTG
CCGTCTGGCGCGGCGGCTGTCGGATTCGGGCATTGCCGTCATTTCGGGCGGCGGGCCGGG
GATTATGGAGGCGGCAAACAAGGGCGCGTTTGCAGGGAAGTCGGTTTCGGTGGGGCTGAA
CATCGTTTTGCCGCACGAGCAGAAACCGAATCCGTATCAGGACATCGCCTTGCGGTTTTC
CCGTTTTGCCGAACGCAAGGCGGTGTTTTTCCGCTATTCCCAAGCATATGTCGTGATGCC
GGGCGGCTTCGGGACGCTGGACGAATTGTTTGAAATCCTGACCTTGGTGCAGACGGGCAA
AGTGCCGCCGCGTCCGATTGTTTTGGTCGGAAAGGCGTTTTGGTCGGGCTTGGCGGAGTG
GATAAACGCGCAGCTTTTGGCGCGCGGTCTGATTTCCGAAGGGGCGGTCTCTTTGTTTGC
CATATCGGACGATGAAGACGAAATCGTTGCGTATCTGTCGGAACACGGGCTTCAGACGGC
ATAGCGTCCTGAGAGTGATGTATAATTGCAAACAATTTAACAATTTTTGATGTCTTTCCC
GAACAGGATGCCGAAATGATCAACCCCATCGCCTCGCTTTCCCCTTTAGATGGCCGTTAT
GCCCAATCCGTTGAAGCATTGCGCCCGATTTTTTCCGAATACGGCCTGATGAAGGCGCGC
GTCAAAGTCGAATTAAACTGGCTCAAAGCCCTCGCCGCCGAGCCGAAGATTGCCGAAGTG
CCGCCCTTCAGTGCCGAAACGCTTGCCGAAATCGACACGGTGATTGAAAACTTTTCATTG
GAAGACGCGGCCGCCGTCAAAGCCATCGAAGCCACCACCAATCACGATGTCAAAGCCATC
GAATATTGGCTGAAAAAACGTTTTGCCGAAGTGCCGGAAGTCGCCGCCGTGAGTGAGTTC
ATCCACTTCGCCTGCACCAGCGAAGACATCAACAACCTGTCCCACGCTTTAATGCTGCAA
GAAGCGCGTGAGGCTGTTTTGCTGCCGAAGCTGGCCGAAATCATCGAAAAACTGACCGCT
ATGGCGCACGACCTTGCCGCCGTCCCGATGATGAGCCGCACCCACGGCCAGCCCGCCACG
CCGACCACTTTGGGCAAAGAAACCGCCAATGTCGTGTACCGCCTGCAACGCCAGTTTAAA
AACCTGCAAGCGCAAGAGTTCCTCGGCAAAATCAACGGCGCGGTCGGCAACTACAACGCC

CATATGGTCGCCTATCCTGATGTAGATTGGGAAACCCACTGCCGCAACTTCGTCGAAATC
AGCCTCGGTCTGACCTTCAACCCCTACACCATCCAAATCGAACCGCACGACTATATGGCG
GAATTCTTCCAAACCCTCAGCCGCATCAACACGATTCTCATCGACTTTAACCGCGACGTT
TGGGGTTATATTTCATTGGGTTACTTCAAACAAAAAGTCAAAGCAGGCGAAGTCGGTTCT
TCCACCATGCCGCACAAAGTCAACCCCATCGACTTTGAAAACTCCGAGGGCAACCTCGGT
ATGGCAAACGCCGTATTGGGCTTTTTGTCCGAAAAACTGCCGATTTCCCGCTGGCAGCGC
GACCTGACCGACAGCACCGTATTGCGCAATATGGGCGTAGGCGTGGGCTATGCCGTATTG
GGTTTCGCCGCCCACCTGCGCGGTCTGAACAAGCTCGAACCCAACCCCGCCGCGCTTGCC
GCCGATTTGGATGCCACTTGGGAGCTGCTCGCCGAGCCGATTCAAACCGTAATGCGCCGT
TACGGTGTCGCCAATCCTTACGAAAAACTGAAAGACCTGACGCGCGGCAAAGGCGGCATC
ACGCCCGAAGTGCTGAAAGGCTTTATCGGATTGCTGGAAATCCCCGCCGAAGCCAAAGCC
AAATTGCTTGAGCTGACCCCCGCGCTGTATGTGGGCAAGGCTGAAGCGTTGGCGAAACGG
ATTTGAGCGTTTACTGAAACCGATGCCGTCTGAACGCGCGTTCAGACGGCATTTTTAAGA
TAACGGGACATACGGGGGCGATATTTATGCAAGCTGTCCGATACAGACCGGAAATTGACG
GATTGCGGGCCGTCGCCGTGCTATCCGTCATGATTTTCCACCTGAATAACCGCTGGCTGC
CCGGAGGATTCCTGGGGGTGGACATTTTCTTTGTCATCTCAGGATTCCTCATTACCGGCA
TCATTCTTTCTGAAATACAGAACGGTTCTTTTTCTTTCCGGGATTTTTATACCCGCAGGA
TTAAGCGGATTTATCCTGCCTTTATTGCGGCCGTGTCGCTGGCTTCGGTGATTGCCTCTC
AAATCTTCCTTTACGAAGATTTCAACCAAATGCGGAAAACCGTGGAGCTTTCTGCGGTTT
TCTTGTCCAATATTTATCTGGGGTTTCAGCAGGGGTATTTCGATTTGAGTGCCGACGAGA
ACCCCGTACTGCATATCTGGTCTTTGGCAGTAGAGGAACAGTATTACCTCCTGTATCCCC
TTTTGCTGATATTTTGCTGCAAAAAAACCAAATCGCTACGGGTGCTGCGTAACATCAGCA
TCATCCTGTTTTTGATTTTGACTGCCTCATCGTTTTTGCCAAGCGGGTTTTATACCGACA
TCCTCAACCAACCCAATACTTATTACCTTTCGACACTGAGGTTTCCCGAGCTGTTGGCAG
GTTCGCTGCTGGCGGTTTACGGGCAAACGCAAAACGGCAGACGGCAAACAGCAAATGGAA
AACGGCAGTTGCTTTCATCACTCTGCTTCGGCGCATTGCTTGCCTGCCTGTTCGTGATTG
ACAAACACAATCCGTTTATCCCGGGAATGACCCTGCTCCTTCCCTGCCTGCTGACGGCAC
TGCTTATCCGGAGTATGCAATACGGGACACTTCCGACCCGCATCCTGTCGGCAAGCCCCA
TCGTATTTGTCGGCAAAATCTCTTATTCCCTATACCTGTACCATTGGATTTTTATTGCTT
TCGCCCATTACATTACAGGCGACAAACAGCTCGGACTGCCTGCCGTATCGGCGGTTGCCG
CGTTGACGGCCGGATTTTCCCTGTTGAGTTATTATTTGATTGAACAGCCGCTTAGAAAAC
GGAAGATGACCTTCAAAAAGGCATTTTTCTGCCTCTATCTCGCCCCGTCCCTGATACTTG
TCGGTTACAACCTGTACGCAAGGGGGGATATTGAAACAGGAACACCTCCGCCCGTTGCCC
GGCGCGCCCCTTGCTGCGGAAAATCATTTTCCGGAAACCGTCCTGACCCTCGGCGACTCG
CACGCCGGACACCTGAGGGGGTTTCTGGATTATGTCGGCAGCCGGGAAGGGTGGAAAGCC
AAAATCCTGTCCCTCGATTCGGAGTGTTTGGTTTGGGTAGATGAGAAGCTGGCAGACAAC
CCGTTATGTCGAAAATACCGGGATGAAGTTGAAAAAGCCGAAGCCGTTTTCATTGCCCAA
TTCTATGATTTGAGGATGGGCGGCCAGCCTGTGCCGAGATTTGAAGCGCAATCCTTCCTA
ATACCCGGGTTCCCAGCCCGATTCAGGGAAACCGTCAAAAGGATAGCCGCCGTCAAACCC
GTCTATGTTTTTGCAAACAACACATCAATCAGCCGTTCGCCCCTGAGGGAGGAAAAATTG
AAAAGATTTGCCGCAAACCAATATCTCCGCCCCATTCAGGCTATGGGCGACATCGGCAAG
AGCAATCAGGCGGTCTTTGATTTGATTAAAGATATTCCCAATGTGCATTGGGTGGACGCA
CAAAAATACCTGCCCAAAAACACGGTCGAAATATACGGCCGCTATCTTTACGGCGACCAA
GACCACCTGACCTATTTCGGTTCTTATTATATGGGGCGGGAATTCCACAAACACGAACGC
CTGCTTAAATCTTCCCACGGCGGCGCATTGCAGTAGCCTGCCTTCTTGTCGGATATTGCC
TTTGGCAGCCTATGCCGCTGTTTGCCGTTCGGGGCGGCGGCTTTTATAGTGGATTAACAA
AAATCAGGACAAGGCGACGAAGCCGCAGACAGTACAAATAGTACGGAACCGATTCACTTG
GTGCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCTAAGGCGAGGCAACGCCGTACTGG
TTTTTGTTAATCCACTATATTTTGCCGTTTTGAGGCCGGGGTCGGAATAACCGTTTTTTG
ATGATTTTCCCTCCCCGGCTGTGTCATCAAAACCCCAATTGCCTTTCCAAACTCTCCACC
AGATTGTCATCCAGTTTCAAAGCCTGCGACAGGCGGGCGAGGAAGACGGTTTCTTTCCGC
GACAAATCGGCACAGACCAACCTTGCCGCCAGATAGGCCTCCGCCGCCAACGCCTCATCG
TTGCCGACGGCGGCGGCGATGTCTTCGATGCTTGCGGGAAGGCGGTATTCGGCGGCGAGC
CATGCGGCAGTTTCGGGGTCTGTGCCGCTTTCCTGTTCGATAGTCCGGCGTTCGGCTTCG
TCTATCATGCCGTCTGAAGCGGCGGCGGCTATCATGGTGCGCAATACGGTACGGCTGTAT
GTTTCTTCAGTTTCTCCGGCAGGTTGGAAATCGCTTTGTGTTACGGTTGCCCGCCCTTTG
TTTTGCTGCCACATCTGATAGCCCCGGTAGGCGAGGTAGCCCAAAGCGGCGGTCGAACCG
ATTTTGGTGATGGTTTTGCGGTTTTTACCGTTCAGCAGCATGGAGGCGACACCGGCAACC
AGCGCGCCTCCGCCGAATGAATTGAGCGGGCTGTCGGAGAATGTGTTGCCTTTTTTTTGA
ACCGTGCTTAAGACTTGGTTGAGCAGTCGGGTAAAGTTCATGAATTTTTCCTTTCTGTTG
CGGGAAGGGCGGTATGTTTACCCTATCCTTTTAAACGGCGGCAGGCCGGCCAATAATTGT
TGGCCGTACCGCTGTGTTTTGATGCGGTTGTCGAGGATGGTTACGCGGCCGTAGTCTTGT
TCGGTGCGGATGAGGCGGCCGACGGCCTGGATGAGTTTGATGCCGGCTTCGGGGACGGTG
ATTTCGATGAAGGGGTTGCCGCCGCGCTGTTCTATCCAGCGGTTTTGGGTTTTTTCGATG
GGGTTGTCGGGCATGGCGAAGGGAAGTTTGGCGATGATGACTTGCACGCAGGCGGTGCCG
GGCAGGTCGAGTCCTTCGGCAAAGCTGTCGAGTCCGAAGATGATGCTGGCTTTGCCTTCT
TCTATGGCCCGGTGGTGTTTTTGCAGGAGGACGGCTTTGGGTAATTCGCCTTGTACGAGC
AAGAGCGGCAGGTAGTCTCCGGGCAGGCGCAGGGCGACATCCTGCATTTGTTTGCGCGAG
GAAAACAAGACGAGCGTGCCGATGGCTTCGGTGGGCGAAATAAGCTTGGGCAGCCATTCG
ATGACGGCGGCGGTGTGGGCTTCGGGGTCTTTGGGGCTGGCGTATATGGGGGGGATGTAG
AGTTCGCCCTGTTTTTCAAAGTCAAAGGGGCTTTTGAGGGCGAGGGTGGTGGTTTCGGGC
AGCCATTGCAGCCCGGTTTGGCGCAGCATCAGGTTGAAGTTGCCCAAGGATTGCAGGGTG
GCGGAAGTCAATACCGCGCCTGCCGCACGCCGCCACAGGCTGTTGGCAAGGTGGGATGCG
CTGCTGATGGGGCTGGCGTTGAAAATGTAGTCGTTTTTGTCGTCGGCGCGGCGGGTTATC
CATTTCGCCAACGGTTCTTCACCCTCGAGGGGGACAGTGGAGAGCAAATCCCAAACCGCG

CTGATTTGTTCGATACGGGCGATAAAAAGACCGAACTCGCTGGTCAGGCGGTCGAGGAGC
GCGCCGTCCTGTTCTTTTTCGCGGCGTGCGGCAGAAAGCGCATCGTTCAGCCCGATAACG
TGTTTGAGCAGGCTGCGCGCAGCAATGGCCGTATTGGAAACGGTGGTTTCGAGGCCTTCG
GGGATTTTGCCGTCTTCCCACAGCCAAGTCGGTTCGCTGTTGGTTCGTCTGTCGTTTTCA
GACACCCCCAGACTTAAAGACGGCTCTTCCGCCAAATGGAATTGCCATTCATGCAGGCTG
TCGAGCAAGGATGCGGCGGCTTCGTCGGCTAGGTTGGCAAGTTCGGCTTTATCGGTCAGC
GCGGCAATTTTGCCGGTCAGCTGCGGCAGTTTTTCCAGCGTCCAAACGGCAATATTCCAT
GAATGTTCGGCGGCAAAACGGCTGAGGGCTTTTTGGGCAGGTGGTGCGCTTCGTCGATG
CAATAGAAACTGTTTTCGGGCGCAGGCAGAATCACGCCGCCGCCCATACTGATGTCGGCA
AGCAGAAGATCGTGGTTGGCAACGACGACATCGACGGTTTCCAAGACATCGCGTGCTAGG
TAAAACGGACATTCCGGACGGTTGGGACAGGCGGTTTTCAGGCAGCCGTGGCGGTCGTTG
GTCACTTTGAGCCAAATCGCGTCATCGATTTTTTCCGGCCAAGTGTCGCGGTCGCCGTTG
AACCGTCGGGCGGAAAATTCGTCGGCGATGTCGCGCAGCAGCTTCAATTCTTCGGGCTTG
GGTTTGCTGTCCCACAAGACGGCGGGGGCTTCAAAGCCGAGCAGGTTTTGCTGGGCATTG
CTTTGCGTCAGTCGATAGAGTTTGTAGGGGCAGAGATAGCGGCCGCGCCCCTTTGGCAAGT
GCGAAGGTCAGTTCCAAACCGCTTTTTTCGACCAGAAACGGCAGGTCGCGGTCTACCAAC
TGCTCCTGCAAGGCAACCGTCGCGCTGCTCACAATCAGCCGCTTGCCGCGTGTTTGCGCC
ATGATGCCGCCGGCCAAAAGGTAGGCCAACGATTTGCCCACGCCGGTCGGCCCTTCGATC
ACGGCAATGCTCTCGCCTTCGCGCTTGGGCGGCTCGCCGCCTTCTTCGCGCGCCAACGTC
CGCGAAAAAGCGTTGGCAACCGCCGCAATCATTTCCCGCTGCGAAGCACGCGGACGGAAA
CCGGGCAGGTTTTTGCCGATGTTTTGGTAATGGTCGCGGATGGCGTTTTTTTCTAAATCG
GTGAGCATGGCGTTTTGTACGGCGGTAGAAGTGGGCTTATTTTAACATTGCACGGAAGCG
GTACAATATCGTTGTCGGAATGGGGGGTGAGGTGAATCGTGCGGACGTGGTTGGTTTTTT
GGTTGCAGCGTTTGAAATACCCGTTGTTGCTTTGGATTGCGGATATGTTGCTGTACCGGT
TGTTGGGCGGCGCGGAAATCGAATGCGGCCGTTGCCCTGTGCCGCCGATGACGGATTGGC
AGCATTTTTTGCCGGCGATGGGAACGGTGTCGGCTTGGGTGGCGGTGATTTGGGCATACC
TGATGATTGAAAGTGAAAAAAACGGAAGATATTGAGTCATTCGGACGCAATGCCGTCTGA
AACGGAAGTTCAGACGGCATTTGTTTTAGGTTGCCGTACCGCTTAGGGAATACCGGCGAC
AGGATGGGCGGGATAGCCGTGGGTATCGACCGAACAGGCAAACCGCCAAGGCGTGTGGAC
GGTGTCGGCGGACAGGTGGGCAAGCTCGGGAATGTGCCGTCTGACAAAGGTGCCGTCGGG
GTCGGTTTTGTGTGCGGCGGCGGCAATGTCGGGGCAGGTGTGCCGTGAGGCGGCAAGCCG
CCAGTTGCCTTGGTTGATTGCTGCATCGAAATCGGTCAGCTGTCGGGCAAACCATATCTC
GCCTTCGCGGCGGGGGAGGTTTAAAACGTGGCAGAAAAAATCCGCGCTCAAGCGTCTCAG
GGCGGGGTGGAGGCTGCCGGTTTTGTGCAAACAGCGCATCGCGGCATCGATAATCGGAAT
GCCGGTCCGGCCCTGCTGCCAAAGCGTCAGGCGCAGGGTGTGTTCAGGATTGCCGTCTGA
AGGGTCGTCATCCGTGTGCTGCAAGGCAAGTTGAAGGAAAAAATCGCGGCGGATGATGTT
GTCCGCCCACGCGTTCAGACGGCGTTCGAGGCTTTCCCGCGCGAGCAGGCGCGGCGAGAT
GCAGCCGGCACTCAAATACGCGCCCATCAGCGAAGTGTGTTTGCGCGAGGGGAAATCCTT
TAAAACGGAGTAGGAATCCGCCTGTTCGAGAAACCGCCGCCACTGCCGCCAAGCCGCCGT
TTCGCCGCTGTTTTGCGGCAGGAAGATGCCGTCTGAAAGCGCGGCAGGCTGCGGGGCGGA
AAGGTTTTCGGGGAAGGGTTGGCGGTATGCCGCGAATAGGTCCGGACCGGCGGGGGGCTG
CTTGGAAAAGCGGTCGAGCCATACTTCGCGGTAGCGGTCGAAATCGGCATATGCCGTGCC
GCCGTCGGGTATCAGGTCGGTTTTGCCGAAAACGGCGCGGTCGTTGACGAAGGTTAACGC
GATGCCGTGTTTGTCCAATTCGTGCCAAAGGGCGTTGTCGGCGAGTTTGTCGGCAAAAGT
ATGGGATTCGTCGGCGATGACGGTGCGGATATTGAGGCGGACGGCGAGCCGGACGAGCTC
GGCAGGAGATGCCGCCGTGTAGAGCGGGATGCCGCGCCCTGCAAGCCCTTGGGCGAGTTC
GGCGGCGGATTGGCGGTAGAACGCGGCGCGGCGAGGGTTGTCTGTTTCGGCATCGTCAAT
CCAAATGCCGATAATGGGCAAACTTCGGCAACGGCGGCGCATAAGGCGGCGTTGTCGCGG
ATGCGGAGGTTTTGGCGGAACCAGACGAGCGTGTGTGCGGCGCACGTGTCCGCATAAAGG
GGGCGGGCGGTTTCAGACGGCATTTCGGCAGCCTTTCCTGCTGGCGATTTTTTCGTTCAG
AAAATCGATGAAGCTGCGGACTTTCGCGCTTAAGAATGCCCTGTCTGCATAAACGGCATT
CAGCCGGTCGGTCGGGACGGCGTATCCGGGCAGCAGCCTCACCAGCGTGCCGCAGCGCAA
ATCGTGTTCCGCCGCCCAAAGCGGCTGATAACCGATGCACGCGCCCGCCTTAATCATTTC
GCGCATCATCAGCGTGTTGTCGGTACGGATGACGGGGGTCAGTTCAAGCCGGTATTTTTT
GCCGTCCGATTTGCGGGTGAGGTCGAGTTTCTGCTGGTTGGTGTAGGTCGGCAGGACGGC
GGGCAGCCCCGCCACTTCTTCCGGCGTTTCCGGCACGCCGTTGCGCCTCAGGAAATCGGG
CGAGGCGAGCAGGGCAAATTCGATTTCCGCCAGTGGGCGCGCAATCAGCGACGGGGACAG
GGTTTGGGAAACGCGCAACGCCAAATCCACGCCTTCGGCAATCAAATCGACGTGGCGGTT
GTCCAAAATCAGTTCTAATGCCACTTCGGGATAACGTTCGCGGTATTCCGCCAGCCAGTT
GCATATCTGGCTGCCGGCAAACCACAGCGGCATCGTTACGCGCAGCAGCCCCTGCGGTTT
TTCCGTCCCCCCGGCGGCTTTTTGCGCGGCATCGTCGAGCGTGTCGAGCGCGTAACTGCA
TTGCCGGTAGTATTCTTCCCCGGCTTCGGTCAGGCTGAGGTTGCGGCTGTTGCGGTGCAG
GAGTTTGGCTTGGACGGTGTTTTCCAAGTGGCTGACGTGTTTGCTTGCCATTGCGGTGGA
GATGCCGAGCGCGTCGGCGGCGCGGGTGAAGCCGCCGCTTTGGACGACTTGGCGGAAAAC
CTTGAGGCTGAACAGGGTGTCCATATTTTCTTGTGTGGAAAAGTTGTATCAATAAAAGCA
GTATATATTTGAAAAGGGGAAACATCTATACTCTACCGCCTGAAATGAAGACAAATATCA
AAGGAGCTTTTATGTCCGATTGCTGCAACCGTATCCAACCGGTTTTGCTTTCTGTTTTGC
GTATCGTAACCGCCTACCTGTTTTTGTTGCACGGTACGTCGAAAATCTTCGCCTTCCCCA
TTGAAATGGGCAGCGGTTCGCCCCGGCGGGCTGTTGCTGCTTGCCGGTATTTTAGAAATTG
TCGGCGGCATTTTGCTGGTGTTGGGCCTGTTTGCGCGCCCTGCCGCGTTTGTTTTGTCCG
GCCAGATGGCGGTTGCCTATTTTATGGCGCACGCTTCCGGAAATGCTTTGTTCCCGATTG
CCAACGGCGGCGAGTCCGCAGTGCTGTTCTGCTTCGTATTCCTCTATATCGCGGCGGCGG
GCGGCGGAGCATGGTCGCTGGACAGGCTGTTTTTCAAGCGTAAAGCCTGAATCGGACTGC
CTAAAGTGTATTTTGTTGAATGTTTTTGAGGAAAAGAAATGACCCGTCAATCTCTGCAAC
AGGCTGCCGAAAGCCGCCGTTCCATTTATTCGTTAAATAAAAATCTGCCCGTCGGCAAAG

```
ATGAAGTTGTCCAAATCGTCGAACACGCCGTTTTGCACACACCTTCTTCGTTCAATTGCC
AATCTGCCCGCGTGGTCGTGGTGTTTGGCGAAGAGCATGATAAGGTGTGGCAATTTGTCG
AAGACGCGGTGCGTGCCGTCGTGCCTGCCGACAGTTTTGAACCGACCGCGCAAAAATTGA
ACCTGTTTAAGGCGGGTGCGGCAACCATTTTGTTTTATGAAGATCAAAATGTCGTCAAAG
GTTTGCAGGAGCAGTTCCCTGCTTATGCCGCTAACTTCCCCGTTTGGGCGGATCAGGCAA
ACGCGATGGTGCAGTATGCCGTTTGGACGACACTTGCCGCGGTCGGCGTAGGTGCAAACC
TGCAACATTACAATCCCTTGCCCGATGCGGCGATTGCCAAAGCGTGGAATATCCCCGAAA
ACTGGTTGTTGCGCGCACAAATGGTTATCGGCGGTATTGAAGGGGCGGCAGGTGAAAAGA
CCTTTGAACCGGTTGGAGAACGTTTGAAAGTGTTCGGCGCATAATTTCGCGGTGAAAAAA
ATGCCGTCTGAACCCTGTTCAGACGGCATTTTTCAGTATCAGGCGGCGAGTTTTCCGCAT
TCTGAGACCTTTGTTTACAAATATCATGTTCAATATAGTTAAAAGAAATTATTCTCATTT
CCTCCGTGAGGCAATATAATTCGGTTGTTTTGTTAAATTGAGTATAAAAATGAAAATATC
ATTTCATTTAGCTTTATTACCCACGCTGATTATTGCTTCCTTCCCTGTTGCTGCCGCCGA
TACGCAGGACAATGGTGAACATTAGACCGCCACTCTGCCCACCGTTTCCGTGGTCGGACA
GTCCGACACCAGCGTACTCAAAGGCTACATCAACTACGACGAAGCCGCCGTTACCCGGAA
CGGACAGCTCATCAAAGAAACGCCGCAAACCATCGATACGCTCAATATCCAGAAAAAGAA
AAATTACGGTACGAACGATTTGAGTTCCATCCTCGAAGGCAATGCCGGCATCGACGCTGC
CTACGATATGCGCGGTGAAAGCATTTTCCTGCGCGGTTTTCAAGCCGACGCATCCGATAT
TTACCGCGACGGCGTGCGCGAAAGCGGACAAGTGCGCCGCAGTACTGCCAACATCGAGCG
CGTGGAAATCCTGAAAGGCCCGTCTTCCGTGCTTTACGGCCGCACCAACGGCGGCGGCGT
CATCAACATGGTCAGCAAATACGCCAACTTCAAACAAAGCCGCAACATCGGAGCGGTTTA
CGGCTCATGGGCAAACCGCAGCCTGAATATGGACATTAACGAAGTGCTGAACAAAAACGT
CGCCATCCGTCTCACCGGCGAAGTCGGGCGCGCCAATTCGTTCCGCAGCGGCATAGACAG
CAAAAATGTCATGGTTTCGCCCAGCATTACCGTCAAACTCGACAACGGCTTGAAGTGGAC
GGGGCAATACACCTACGACAATGTGGAGCGCACGCCCGACCGCAGTCCGACCAAGTCCGT
GTACGACCGGTTCGGACTGCCTTACCGCATGGGGTTCGCCCACCGGAACGATTTTGTCAA
AGACAAGCTGCAAGTTTGGCGTTCCGACCTTGAATACGCCTTCAACGACAAATGGCGTGC
CCAATGGCAGCTCGCCCACCGCACGGCGGCGCAGGATTTTGATCATTTCTATGCAGGCAG
CGAAAATGGCAACTTAATCAAACGTAACTACGCCTGGCAGCAGACCGACAACAAAACCCT
GTCGTCCAACTTAACGCTCAACGGCGACTACACCATCGGCCGTTTTGAAAACCACCTGAC
CGTAGGCATGGATTACAGCCGCGAACACCGCAACCCGACATTGGGTTTCAGCAGCGCCTT
TTCCGCCTCGATCAACCCCTACGACCGCGCAAGCTGGCCGGCTTCGGGCAGATTGCAGCC
TATTCTGACGCAAAACCGCCACAAAGCCGACTCCTACGGCATCTTTGTGCAAAACATCTT
CTCCGCCACGCCCGATTTGAAATTGGTCCTCGGCGGCCGTTACGACAAATACACCTTTAA
TTCCGAAAACAAACTCACCGGCAGCAGCCGCCAATACAGCGGACACTCGTTCAGCCCCAA
CATCGGCGCAGTGTGGAACATCAATCCCGTCCACACACTTTACGCCTCGTATAACAAAGG
CTTCGCGCCTTATGGCGGACGCGGCGGCTATTTGAGCATCGATACGTTGTCTTCCGCCGT
GTTCAACGCCGACCCCGAGTACACCCGCGAATACGAAACCGGCGTGAAAAGCAGTTGGCT
GGACGACCGGCTCAGCACTACGTTGTCTGCCTACCAAATCGAACGCTTCAATATCCGCTA
CCGCCCCGATCCAAAAAACAACCCTTATATTTATGCGGTTAGCGGCAAACACCGTTCGCG
CGGCGTGGAATTGTCCGCCATCGGGCAAATCATCCCCAAAAAACTCTATCTGCGCGGTTC
GTTGGGCGTGATGCAGGCGAAAGTCGTTGAAGACAAAGAAAATCCCGACCGAGTGGGCAT
CCATTTGAATAATACCAGCAACGTTACCGGCAACCTGTTTTTCCGTTATACCCCGACCGA
AAACCTCTACGGCGAAATCGGCGTAACCGGTACAGGCAAACGCTACGGTTACAACTCAAG
AAATAAAGAAGTGACTACGCTTCCAGGCTTTGCCCGAGTTGATGCCATGCTTGGCTGGAA
CCATAAAAATGTTAACGTTACCTTTGCCGCAGCCAATCTGCTCAATCAAAAATATTGGCG
TTCGGACTCTATGCCGGGTAATCCGCGCGGCTATACTGCCCGGGTAAATTACCGTTTGTG
ATGAAATCAGGCAAAGGCTGAAATAAAACTAAACACATTTTTTCACTCAAATCGAACACG
CCTTCAATAAAATGCCATAAAATCCGCACATTAATCTGACACACAAGAGATACCTATGAA
ACTGAAAACCTTAGCTTTGACTTCATTGACCCTGTTGGCATTGGCCGCTTGTAGCAAACA
GGCTGAAACCAGTGTTCCGGCAGACAGCGCCCAAAGCAGCTCATCTGCTCCGGCAGCCCC
TGCTGAGTTGAACGAAGGTGTGAACTACACTGTATTGTCTACGCCTATTCCGCAACAGCA
GGCCGGTAAAATCGAAGTATTGGAATTTTTCGGCTACTTCTGCCCGCATTGCGCCCATCT
TGAGCCGGTCTTGAGCGAGCACATCAAAACGTTTAAAGACGATACCTATATGCGCCGGGA
GCATGTCGTGTGGGGTGATGAAATGAAACCTTTGGCACGTTTGGCGGCCGCAGTGGAAAT
GGCCGGTGAATCAGATAAAGCCAACAGCCATATTTTCGATGCGATGGTTAATCAAAAAAT
CAATCTGGCGGATACCGATACCCTGAAAAAATGGCTGTCCGAGCAAACAGCGTTTGACGG
CAAAAAAGTATTGGCTGCATTTGAGGCTGCTGAAAGCCAAGCGCGTGCGGCTCAAATGGA
AGAGTTGACCAATAAATTCCAAATCAGCGGCACACCGACTGTGATTGTCGGCGGCAAATA
CCAAGTTGAATTTAAAGACTGGCAGTCCGGTATGACCACGATTGACCAGTTGGTGGATAA
AGTACGCGAAGAGCAGAAAAAGCCGCAATAAGTTGAGGATTGAATGAGTAAAGGCCATCT
GAAAATAGGATTTCAGACGGCCTTTTGTATTTAGGCTTTATAGAAGAGATGATTGCTTAA
AGCCTTATGGTTTTAAATCAGAATATATAGCGGATTAACAAAAACCAGTACGGCGTTGGC
TCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCC
GTACTATCTGTACTGTCTGCGGCTCGCCGCCTTGTCCTGATTTTTGTTAATCCACTATAA
ATCAGAATATAAAACAAAAACGCCGTCTGAAATTTCAGACGGCGTTTTCTGTTAAATCGG
CTTACAAACCCGGGAACATCCCTTTTATCCCCCTCATTCCTTTCGCCATACGCATCAGTT
TGCCCAAGCCGTTGCCGCTGAACATCTTCATCATTTGTTGCATTTGTTCAAACTGTTTGA
GCAATTTGTTCACTTCCTGCACGGTTGTGCCCGCACCCATTGCAATACGGCGTTTGCGGC
TGGCTTTGAGCAGGGCAGGGTTGGCGCGTTCTTTAGGGGTCATCGAGTTGATGATGGCTT
CTACTTTGCCCATCGCTTTTTCAGCCGTTGCTTCGGGGATTTGTTTCGAGATTTGACCCA
GTTCGCCCGGCATTTTCGACATCAGGTTTTCCAAACCGCCCATATTGCGCATTTGCTGGA
TTTGTTCTTTAAAGTCGTTGAGGTCGAAGCCTTTGCCTTTGTGCAGCTTTTTCGCCATTT
TAGCGGCGGCTTCTTCGTCTATACCTTTTTGAACGTCTTCAATCAGGGTCAATACGTCGC
CCATACCCAAAATGCGGCCGGCAAGACGGTCGGGGTGGAAAGGTTCGAGGCCGTTGATTT
```

TTTCGCCGACACCGATAAATTTAATCGGTTTGCCGGTTACGTGGCGTACGGACAATGCCG
CACCGCCGCGCGAGTCGCCGTCCATCTTGGTCAATACGACTCCGGTCAGCGGCAGGGCTT
CATTAAATGCCTGAGCAGTGTTCACCGCATCCTGACCCAGCATCGCATCGATGACGAACA
AAGTTTCCACCGGGTTAACCGCCGCGTGAAGGGCTTTGATTTCGTTCATCATCTCTTCAT
CGATTGCCAAACGGCCGGCGGTATCGACCATCAATACATCGTAAAAATGTTTTTTGGCGT
AATCGACGGCGGCAGTTGCAATTTCAACCGGTTTTTGGTTGGTATCGGACGGGAAAAAAT
CCACGCCGACCTGTTCGGCCAACAGACGCAGCTGTTCAATCGCGGCAGGACGGTAAACGT
CGGCGGATACCACCAAAACCTTTTTCTTCTGATCGTTTTTCAACAGGCGGGCGAGTTTGC
CGACGGTCGTCGTCTTGCCTGCGCCCTGCAAACCTGCCATCAACACGACGGCGGGCGGCG
CAACCGACAAATCCAGCGTTTTGTTTTCCCTGCCCATCAGTTCGGTCAGGGCTTTGTTGA
CCACGCCGATAAATGCCTGATCCGGCGTCAGGCTGCCCGCTACTTCCTGACCGAGGGCCT
TTTCTTTGACGTTGTTGATGAACTCTTTGACGACAGGCAGGGCGACATCCGCCTCAAGCA
GGGCGAGGCGGACTTCGCGCAAGGCCTCTTTAATATTGTCTTCGGTCAGTTTGGCCTGCC
CCCGGATGTTTTTGAAGACATTGCTGAAGCGGCCGGTTAAATTGTCTAACATACTGGTCC
TTGGTCTGAATAAGAATAGCTTGCCCCATCAGGGGCATTCTTTGTTAAAATAAAATCAAA
ATAATTTGATGCGGCTTGTGTGCCGGACAGCATATCGGCAAATCCGTCAAGGCTTGACCG
AAATGGGGATTTTACAATTCCAACGTTAAAAGTTCCAATATTTCATAAGCGGCCGCATAC
GGCGCAACAGTATAGATAGAGAAAGTCCACCATGCCGACAGTTTTCATCTTTTTGACGGC
GGTTTACGCAGGATTGGGTGCATTTGCATGGCACTGCCAACAGCAGGGGTGCGGCCGGGA
TTACCCGTGGAAGACGGAATTGCCGGTTTTGGGTGCGGCATTGACCGTCCACGGCGCGGC
ACTGCTTATGCCGGTCATTCAAGACAAAATCATCATTATGGGCTTCGGGTATTCCGGCAG
CCTGATTGTTTGGATGATGCTGTTTATTTATTTTGCCGGCAGCTTCTTTTATCCGCTGCG
CGGAGTGCAGTTGCTGCTGTATCCTTGCGCCGCACTGATGCTGCTGTCAGGTTTGGTTTT
TCCTGGAAAATTCTCGGGATATGAAATTACCGACCTTCCCTTTATGCTGCATATCGGAAC
TTCGCTGCTCGCATACGGGCTGTTCGGCATCGCAACATTATTGTCCGTTTTGACCCTGCT
GCTGAATCGGAGCCTGCACCGCAGGAGCTTCTCCAAGCTCGCAGGATTCCTGCCGTCGCT
GCTCAGTTTGGAAAAACTCATGTTCCAGGCCATGTGGGCAGGTTTCATCCTGCTGACCTA
TTCCGTCGTCAGTGGAACATTTTTGCCGAAGCCGTATTCGGCAAACCCATGACCTTTAC
CCATAAAACCGTATTCGGCATATTGTCATGGCTGATTTACGGCGGACTGCTGCTCAAGCA
CAGCATGACCGCATGGCGCGGCAAAAAAGCCGCCGTGTGGACCATCATCGGATTTGTCAG
CCTTATGATTGCCTATATGGGCAGCAAGTTCGTATTGGAAATCATTCTGAAAAGATAAGA
AGAGCCAACAGATGCCGTCTGAGTCCCCGAGTTTCAGACAGCATATTCACAAAGGCGCAC
CAGCCGGAGGAGGGAGAGGAAAGGATTGTTGGAGGCGGCGCAGTATTTAGCAGAAATAAA
AAACCTTATCCGACAGCGACATGACGAATTTCCCCAAAAAAATCCCGCTGAAAGCATTGA
CCGTTTTTCCCTGTGGGCGTATAGTTCGGTTCTTCGCTGCTGCAGAAGTGGCGGACGAAC
TGAAAAGTATAGCACAGAATGTTGGGGATATCGAGAGATATCTTGACAGGCGGAAGGAAT
ACTTTATAATTCGCAACGCTCTTTAACAAAACAGATTACCGATAAGTGTGAGTGCCTTGA
GTCTCACACTGTTTGAAAGACAGACAAGATAATGTTTTGAACATTGTCCTGTTGGTTTCT
TTGAAGCAGACCAGAAGTTAAAAAGTTAGAGATTGAACATAAGAGTTTGATCCTGGCTCA
GATTGAACGCTGGCGGCATGCTTTACACATGCAAGTCGGACGGCAGCACAGAGAAGCTTG
CTTCTCGGGTGGCGAGTGGCGAACGGGTGAGTAACATATCGGAACGTACCGAGTAGTGGG
GGATAACTGATCGAAAGATCAGCTAATACCGCATACGTCTTGAGAGAGAAAGCAGGGGAC
CTTCGGGCCTTGCGCTATTCGAGCGGCCGATATCTGATTAGCTAGTTGGTGGGGTAAAGG
CCTACCAAGGCGACGATCAGTAGCGGGTCTGAGAGGATGATCCGCCACACTGGGACTGAG
ACACGGCCCAGACTCCTACGGGAGGCAGCAGTGGGGAATTTTGGACAATGGGCGCAAGCC
TGATCCAGCCATGCCGCGTGTCTGAAGAAGGCCTTCGGGTTGTAAAGGACTTTTGTCAGG
GAAGAAAAGGCTGTTGCTAATATCAGCGGCTGATGACGGTACCTGAAGAATAAGCACCGG
CTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGGTGCGAGCGTTAATCGGAATTACTG
GGCGTAAAGCGGGCGCAGACGGTTACTTAAGCAGGATGTGAAATCCCCGGGCTCAACCCG
GGAACTGCGTTCTGAACTGGGTGACTCGAGTGTGTCAGAGGGAGGTAGAATTCCACGTGT
AGCAGTGAAATGCGTAGAGATGTGGAGGAATACCGATGGCGAAGGCAGCCTCCTGGGACA
ACACTGACGTTCATGCCCGAAAGCGTGGGTAGCAAACAGGATTAGATACCCTGGTAGTCC
ACGCCCTAAACGATGTCAATTAGCTGTTGGGCAACCTGATTGCTTGGTAGCGTAGCTAAC
GCGTGAAATTGACCGCCTGGGGAGTACGGTCGCAAGATTAAAACTCAAAGGAATTGACGG
GGACCCGCACAAGCGGTGGATGATGTGGATTAATTCGATGCAACGCGAAGAACCTTACCT
GGTCTTGACATGTACGGAATCCTCCGGAGACGGAGGAGTGCCTTCGGGAGCCGTAACACA
GGTGCTGCATGGCTGTCGTCAGCTCGTGTCGTGAGATGTTGGGTTAAGTCCCGCAACGAG
CGCAACCCTTGTCATTAGTTGCCATCATTCAGTTGGGCACTCTAATGAGACTGCCGGTGA
CAAGCCGGAGGAAGGTGGGGATGACGTCAAGTCCTCATGGCCCTTATGACCAGGGCTTCA
CACGTCATACAATGGTCGGTACAGAGGGTAGCCAAGCCGCGAGGCGGAGCCAATCTCACA
AAACCGATCGTAGTCCGGATTGCACTCTGCAACTCGAGTGCATGAAGTCGGAATCGCTAG
TAATCGCAGGTCAGCATACTGCGGTGAATACGTTCCCGGGTCTTGTACACACCGCCCGTC
ACACCATGGGAGTGGGGGATACCAGAAGTAGGTAGGATAACCACAAGGAGTCCGCTTACC
ACGGTATGCTTCATGACTGGGGTGAAGTCGTAACAAGGTAGCCGTAGGGGAACCTGCGGC
TGGATCACCTCCTTTCTAGAGAAAGAAGAGGCTTTAGGCATTCACACTTATCGGTAAACT
GAAAAAGATGCGGAAGAAGCTTGAGTGAAGGCAAGATTCGCTTAAGAAGAGAATCCGGGT
TTGTAGCTCAGCTGGTTAGAGCACACGCTTGATAAGCGTGGGGTCGGAGGTTCAAGTCCT
CCCAGACCCACCAAGAACGGGGGCATAGCTCAGTTGGTAGAGCACCTGCTTTGCAAGCAG
GGGGTCATCGGTTCGATCCCGTTTGCCTCCACCAATACTGTACAAATCAAAACGGAAGAA
TGGAACAGAATCCATTCAGGGCGACGTCACACTTGACCAAGAACAAAATGCTGATATAAT
AATCAGCTCGTTTTGATTTGCACAGTAGATAGCAATATCGAACGCATCGATCTTTAACAA
ATTGGAAAGCCGAAATCAACAAACAAAGACAAAGCGTTTGTTTTGATTTTTTATTCTTTG
CAAAGGATAAAAATCTCTCGCAAGAGAAAAGAAAACAAACACAGTATTTGGGTGATGATT
GTATCGACTTAATCCTGAAACACAAAAGGCAGGATTAAGACACAACAAAGCAGTAAGCTT
TATCAAAGTAGGAAATTCAAGTCTGATGTTCTAGTCAACGGAATGTTAGGCAAAGTCAA

GAAGTTCTTGAAATGATAGAGTCAAGTGAATAAGTGCATCAGGTGGATGCCTTGGCGATG
ATAGGCGACGAAGGACGTGTAAGCCTGCGAAAAGCGCGGGGGAGCTGGCAATAAAGCAAT
GATCCCGCGATGTCCGAATGGGGAAACCCACTGCATTCTGTGCAGTATCCTAAGTTGAAT
ACATAGACTTAGAGAAGCGAACCCGGAGAACTGAACCATCTAAGTACCCGGAGGAAAAGA
AATCAACCGAGATTCCGCAAGTAGTGGCGAGCGAACGCGGAGGAGCCTGTACGTAATAAC
TGTCGAGATAGAAGAACAAGCTGGGAAGCTTGACCATAGTGGGTGACAGTCCCGTATTCG
AAATCTCAACAGCGGTACTAAGCGTACGAAAAGTAGGGCGGGGCACGTGAAATCCTGTCT
GAATATGGGGGGACCATCCTCCAAGGCTAAATACTCATCATCGACCGATAGTGAACCAGT
ACCGTGAGGGAAAGGCGAAAAGAACCCCGGGAGGGGAGTGAAACAGAACCTGAAACCTGA
TGCATACAAACAGTGGGAGCGCCCTAGTGGTGTGACTGCGTACCTTTTGTATAATGGGTC
AACGACTTACATTCAGTAGCGAGCTTAACCGAATAGGGGAGGCGTAGGGAAACCGAGTCT
TAATAGGGCGATGAGTTGCTGGGTGTAGACCCGAAACCGAGTGATCTATCCATGGCCAGG
TTGAAGGTGCCGTAACAGGTACTGGAGGACCGAACCCACGCATGTTGCAAAATGCGGGGA
TGAGCTGTGGATAGGGGTGAAAGGCTAAACAAACTCGGAGATAGCTGGTTCTCCCCGAAA
ACTATTTAGGTAGTGCCTCGAGCAAGACACTGATGGGGGTAAAGCACTGTTATGGCTAGG
GGGTTATTGCAACTTACCAACCCATGGCAAACTAAGAATACCATCAAGTGGTTCCTCGGG
AGACAGACAGCGGGTGCTAACGTCCGTTGTCAAGAGGGAAACAACCCAGACCGCCAGCTA
AGGTCCCAAATGATAGATTAAGTGGTAAACGAAGTGGGAAGGCCCAGACAGCCAGGATGT
TGGCTTAGAAGCAGCCATCATTTAAAGAAAGCGTAATAGCTCACTGGTCGAGTCGTCCTG
CGCGGAAGATGTAACGGGGCTCAAATCTATAACCGAAGCTGCGGATGCCGGTTTACCGGC
ATGGTAGGGGAGCGTTCTGTAGGCTGATGAAGGTGCATTGTAAAGTGTGCTGGAGGTATC
AGAAGTGCGAATGTTGACATGAGTAGCGATAAAGCGGGTGAAAAGCCCGCTCGCCGAAAG
CCCAAGGTTTCCTGCGCAACGTTCATCGGCGTAGGGTGAGTCGGCCCCTAAGGCGAGGCA
GAAATGCGTAGTCGATGGGAAACAGGTTAATATTCCTGTACTTGATTCAAATGCGATGTG
GGGACGGAGAAGGTTAGGTTGGCAAGCTGTTGGAATAGCTTGTTTAAGCCGGTAGGTGGA
AGACTTAGGCAAATCCGGGTCTTCTTAACACCGAGAAGTGACGACGAGTGTCTACGGACA
CGAAGCAACCGATACCACGCTTCCAGGAAAAGCCACTAAGCTTCAGTTTGAATCGAACCG
TACCGCAAACCGACACAGGTGGGCAGGATGAGAATTCTAAGGCGCTTGAGAGAACTCAGG
AGAAGGAACTCGGCAAATTGATACCGTAACTTCGGGAGAAGGTATGCCCTCTAAGGTTAA
GGACTTGCTCCGTAAGCCCCGGAGGGTCGCAGAGAATAGGTGGCTGCGACTGTTTATTAA
AAACACAGCACTCTGCTAACACGAAAGTGGACGTATAGGGTGTGACGCCTGCCCGGTGCT
GGAAGGTTAATTGAAGATGTGAGAGCATCGGATCGAAGCCCCAGTAAACGGCGGCCGTAA
CTATAACGGTCCTAAGGTAGCGAAATTCCTTGTCGGGTAAGTTCCGACCCGCACGAATGG
CGTAACGATGGCCACACTGTCTCCTCCTGAGACTCAGCGAAGTTGAAGTGGTTGTGAAGA
TGCAATCTACCCGCTGCTAGACGGAAAGACCCCGTGAACCTTTACTGTAGCTTTGCATTG
GACTTTGAAGTCACTTGTGTAGGATAGGTGGGAGGCTTAGAAGCAGAGACGCCAGTCTCT
GTGGAGCCGTCCTTGAAATACCACCCTGGTGTCTTTGAGGTTCTAACCCAGACCCGTCAT
CCGGGTCGGGGACCGTGCATGGTAGGCAGTTTGACTGGGGCGGTCTCCTCCCAAAGCGTA
ACGGAGGAGTTCGAAGGTTACCTAGGTCCGGTCGGAAATCGGACTGATAGTGCAATGGCA
AAAGGTAGCTTAACTGCGAGACCGACAAGTCGAGCAGGTGCGAAAGCAGGACATAGTGAT
CCGGTGGTTCTGTATGGAAGGGCCATCGCTCAACGGATAAAAGGTACTCCGGGGATAACA
GGCTGATTCCGCCCAAGAGTTCATATCGACGGCGGAGTTTGGCACCTCGATGTCGGCTCA
TCACATCCTGGGGCTGTAGTCGGTCCCAAGGGTATGGCTGTTCGCCATTTAAAGTGGTAC
GTGAGCTGGGTTTAAAACGTCGTGAGACAGTTTGGTCCCTATCTGCAGTGGGCGTTGGAA
GTTTGACGGGGGCTGCTCCTAGTACGAGAGGACCGGAGTGGACGAACCTCTGGTGTACCG
GTTGTAACGCCAGTTGCATAGCCGGGTAGCTAAGTTCGGAAGAGATAAGCGCTGAAAGCA
TCTAAGCGCGAAACTCGCCTGAAGATGAGACTTCCCTTGCGGTTTAACCGCACTAAAGAG
TCGTTCGAGACCAGGACGTTGATAGGTGGGGTGTGGAAGCGCGGTAACGCGTGAAGCTAA
CCCATACTAATTGCTCGTGAGGCTTGACTCTATCATTTGAAGAACTTCAAGAGATAAAAG
CTTACTGACTGATTCAGTCATTACCGAATATATTGATTAAGGCTTTACCGATTTGTAACA
GTTTAAGTTTGGCGGCCATAGCGAGTTGGTCCCACGCCTTCCCATCCCGAACAGGACCGT
GAAACGACTCAGCGCCGATGATAGTGTGGTTCTTCCATGCGAAAGTAGGTCACTGCCAAA
CACCCATTCAGAAAACCCCCGATTATTCGGGGGTTTTTGCTTTGCCCGGAAAAAAATGTTT
GCTTTGCCCGGAAAAAAATGTCGGTGATGGCGGGACGGCATCCGTACGGTGTCCGGTCGGG
TTTGCGGAGGAACGGCTTGAAACTTTGGGATATTCATTTTAGAATGACTCGTTTTATCGT
CGCAAGATGCGGTTTATTGTTTGCAACCCTTAAAGGAAAAACCATGAAGAAAATGTTCGT
GCTGTTCTGTATGCTGTTCTCCTGCGCCTTCTCCCTTGCGGCGGTAAACATCAATGCGGC
TTCGCAGCAGGAGTTGGAGGCGCTGCCGGGCATAGGCCCGGCGAAGGCGAAGGCCATTGC
GGAATACCGTGCGCAAAACGGTGCGTTCAAGTCTGTAGACGATTTGACCAAGGTAAAGGG
CATCGGCCCTGCGGTGCTGGCGAAGCTGAAGGACCAGGCTTCGGTCGGCGCGCCCCGCACC
AAAAGCCCCAGCCAAACCGGTGCTGCCCGCGGATAAAAAATAGGGGAACCTGTAAAGGAA
AGGGCATCGGCCGCCGTCGGTGCTTTTTTGTTTGGAAGGGAAATGGCTAAAATATGTAGC
ATTATGTTCTGTATCGTTGTTTACCGCTTCCGCACCTTTGTCCGCCTTAAAGCAGGTAGA
CACCGCAATGAATCGACGCAAAGAAAATGCCGTCTGAACATGCGTTCGGGCGGCGTTTTG
TTGGGGGGTATCGGAGCGGAACGTCTGAAAAAGGGTTTCAGGCCGTCTTTGGGCGTGTGG
TGACAGTCGAAAACGTGATAAGGCTACCTGAAAAGTTTGGGAGATTTTCAGGTAGCCTTT
GGTATTGGGCGCAACAGACGCAGGTACAGATTAGCGGTGTGCCGTAATCGTACGAATGCC
GATTCAACCTAAGCAGACATCAGTATTTAGGAAGTGGATGTTTGATGGAGCAAAGGTTGT
ACGAAGGGTGGAAGGCAACCTGTGGGTGTTTGGTATGGTCGCGCTTGAAAAAACGTGTTT
TAAGGGACAAATGCCGTCTGAAAATCGGTTTCAGACGGCATTTTCTGTTTATTTAAAGCA
AACAGGAAAAGGCAGCAATATTCTGCAGTCTTCCTATTCACACAAGCGTTTTATAGTTAA
TTAAAAACAAAATAGTACAATACTCAACTTTGAAGGTCTAACCATGGCATACTCTGCGGA
CTTAAGAAACAAAGCTTTAAACTAGGGGCTGTACTAGATTAGCAGATATGTTACCCTCGA
AATATGAAGATAACGCACTGCAAATTAAAGAAAAAAGTACAGAAAGAACTGCTCCGTTTT
TTGTGCTGGAAGTTACCGCCCGTTCTGCCGCCGATATTTTGGGTATCCATCCCAATTCGG

CAGTACTGTTCTACCGTAAAATCCGCACGGTTATCAACCATCATTTGGCCTTGGCTGCCG
ATGAGGTTTTTGAGGGCCCTGTCGAGCCGGACGAAAGCGATTTCGGCGGACGGCGTAAAG
GCAGACGTGGTCGCGGTGCGGCAGGAAAAGTGGTTGTCTTCGGCATTCTGAAACGCAACG
GACGGGGCTATACCGTTGTCGTAGATAATGCCAAGTCTGAAACGTTACTCCCTGTCATCA
AAAAGAAAATCATGCCGGACAGTATTGTTTATACCGATAGTCTGAGCAGCTGCGACAAGT
TGGACGTGAGCGGTTTTATCCATTACCGCATCAACCATTCCAAGGAATTTGCAGACCGTC
AGAACCACATTAACGGCATTGAGAATTTTTGGAATCAGGCAAAACGCGTCTTGCGAAAAT
ACAACGGAATCGATCGTAAATCTTTCCCGCTGTTCTTGAAAGAATGCGAATTTCGATTTA
ACTTCGGCACACCGTCTCAACAGCTTAAAATCCTGCGGGATTGGTGTGGAATTTAGGGCT
AATCTAGTACAGCACCTAACAAAAACCAGTACGGCGTTGGCTCGCCTTAGCTCAAAGAGA
ACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATTTGTACTGTCTG
CGGCTTCGTCGCCTTGTCCTGATTTTTGTTAATCCACTATATTTTAGATAATGCGTGATT
TCACCGTATGGGTGTCTTACGGGAAATGGCGGAAAAATTGGGACATAAGGTATTGCCTCT
TGCACCTTATTCACCTGAGCTCAACCCGATTGAGAAAGTGTGGGCGAATATTAAGCGGTA
TCTGCGAACCGTTTTGTCTGATTACGCCCGATTTGACGATGCACTACTGTCCTATTTTGA
TTTTAATTGACTATAGAACGTTGCGGCTACGCGGAAGCCGTACTCGTTGGATTTGGAGCG
GCCCATTTTGGTTTTGTCACCGTCCAAGACAATCTCACGGGGTTTGTAGATTGTTTTGTG
ACGGTAGTATGGATCAAACTCGAGACCGACGCTGTCGGTCAACTGTTTGCCTACATTCAG
ACCGATACCGACACTCCAACCTTTGGCGCTTTTGCTGACATCGCGGGAAGCACCCATCTG
GGTCGTCATCACTTTGGTTTTGCCGCGCAAATCTGCATATGCATCCGCCCAAGGGGTCAG
GGATCATCCGTCCCCCAAATCTTGGCGGATTTCGCCATGGACTTTCAAAGCAAGGTTTTC
ATGCTTGGTAACGGTGTTTTTCCTTATCGCCGATGATGGCTTTGCCTTTGCCGTTAGACT
CGGGAATATCGGCTACCGTAACGGCGGACACGGCTGCAAGTGAGAGTGCAAGCAGGGTTT
TTTCATGTTTTTCTTCCTATAATGAGGATAAATAAATGGAAAAAGTGTGGGAAATACCCG
CATTCCCATTAAATCTTTTTTCAAGCAATGAGTTCTTTTTGTTTTCAACATTTTCCTTGA
GACCTTTGCAAAAATAGTCTGTTAACGAAATTTGACGCATAAAAATGCGCCAAAAAATTT
TCAATTGCCTAAAACCTTCCTAATATTGAGCAAAAAGTAGGAAAAATCAGAAAAGTTTTG
CATTTTGAAAATGAGATTGAGCATAAAATTTTAGTAACCTATGTTATTGCAAAGGTCTCT
CCTTGTGTATGAAATTTTGCCGGATGTGAAGGCGGAATCGGCAGCGGGGGTGTTCTGTAC
CGGATTGTCGTGGAAATGGGAAAACGGATGTTCCGTGCAGGTTTGTCCAAATGAATGGCG
GGTATTGTTTTTATCAATCTGTTTCTTTTTATTTGAAATAAAATTTCTAAAATAATAAAA
ATATGAAATTTAAAATCTATAAAAAAAGATATATCAGTTATTTTGAAATAAAATAGCTTT
GTAGTAATATGTTGCACTTGTTTGTGCAAGGTAAACGATGTAACCTAAGCCGCGTATAAA
AACCCATCAGGAAAGATGCAAGATGACACACCATTACCCCACAGACGATATTAAGATTAA
AGAAGTTAAAGAGTTGTTGCCGCCGATAGCCCATCTTTACGAGCTGCCGATTTCCAAAGA
GGCTTCGGGCTTGGTTCACCGCACCCGTCAGGAAATTTCCGATTTGGTTCACGGCAGGGA
CAAGCGGCTGTTGGTTATTATCGGGCCGTGTTCGATTCACGATCCGAAAGCGGCGTTGGA
ATATGCGGAGCGTTTGTTGAAACTCCGCAAGCAGTATGAAAACGAGCTTTTGATTGTGAT
GCGCGTTTATTTCGAGAAGCCGAGGACGACGGTGGGTTGGAAAGGTTTGATTAACGACCC
GCATTTGGACGGTACGTTTGACATCAATTTCGGTTTGCGTCAGGCGCGCAGCCTGTTGTT
GTCGCTGAACAATATGGGTATGCCTGCCTCTACCGAGTTTTTGGATATGATTACGCCGCA
ATATTATGCGGACTTGATTTCTTGGGGGGCAATCGGTGCGCGGACGACCGAAAGCCAAGT
TCACCGCGAATTGGCAAGCGGGCTGTCCTGCCCCGTCGGCTTTAAAAACGGTACGGACGG
CAATTTGAAGATTGCCATCGACGCAATCGGTGCGGCGAGCCATTCGCATCATTTCCTGTC
TGTAACCAAGGCCGGGCATTCCGCCATTGTCCATACCGGCGGCAATCCCGACTGTCATGT
CATTTTGCGCGGCGGCAAAGAGCCGAATTATGATGCGGAACACGTCAGCGAGGCGGCGGA
ACAACTGCGTGCGGCAGGGGTAACCGACAAGCTGATGATAGATTGCAGCCACGCCAACAG
CCGCAAGGATTACACTCGGCAGATGGAAGTGGCACAAGACATTGCCGCCCAATTGGAACA
GGACGGCGGCAATATCATGGGCCTGATGGTGGAAAGCCATTTGGTCGAAGGCAGACAGGA
CAAGCCGGAAGTCTACGGCAAGAGCATTACCGATGCGTGTATCGGTTGGGGCGCGACTGA
AGAACTGTTGGCATTGTTGGCAGGTGCAAACAAAAAACGTATGGCGCGCGCCAGTTGAGA
TTTTTGACGCAGAATGTCATAAAATGTCGTCTGAAGCGTTCAGACGGCATTTTTGTGGAG
GAAATATGCTCAAAATAACCCTAATTGCGGCGTGTGCGGAAAACCTGTGCATCGGGGCGG
GCAATGCTATGCCTTGGCACATCCCCGAAGATTTCGCATTTTTCAAAGCCTATACCTTGG
GCAAACCCGTCATTATGGGGCGGAAAACGTGGGAATCCCTGCCCGTCAAACCCCTGCCCG
GACGGAGGAACATCGTCATCAGCCGGCAGGCGGATTATTGCGCGGCAGGCGCGGAAACGG
CGGCAAGTTTGGAGGCGGCATTGGCATTGTGCGCAGGCGCGGAAGAAGCCGTCATTATGG
GCGGCGCGCAGATATACGGACAAGCGATGCCATTGGCGACCGATTTGCGGATAACCGAAG
TGGATTTGTCTGTGGAAGGAGATGCATTTTTCCCCGCAATAGACCGGACGCATTGGAAAG
AAGCAGAGCGGACGGAACGCCGTGTCAGCAGCAAAGGCACGCGCTATGCTTTTGTGCATT
ATTTGAGATATTCAAATATAAACTCTCTATAAAATCCCCCGCAAATGATGGGCTGAAATA
GAAAATATTGTTATTCCCCCGAAGATGGGAATCCGGGATTTTAAAGTTAGGGTAATTTAT
CCGAAATAACAACAATCTTCCATCGTCATTCCCGCAAAAGCGGGAATCCGGAAACGAAAA
GCTAAAGCAATTTATCGGAAAAAACCGAAGTTTAAAGAACCGGATTCCCGCCTGCGCGGG
AATGACGAGATTTTAGGTTATGGGGATTTATTGGGAATAATGGAACAAAGAAAGCAGAAA
TAAGGATATAGAGGCTGTCTTTGGATTTGCGATGGTTGTCGGAGAATGCCGTCTGAAGCC
GTTTCAGACGGCATTTTTCCAGCTTGAGAACGGATGCCTGCTCAAATAAGCATTGGTAAA
CATACCGTCGGCAGTGATTTCCCGTCCCAGCCAGTCCGGACGGTCAAAATCGGCATTCTC
GTCGGGCAACTCGATTTCCGCGACGACCAAAGGCGCATTATCGCCAAGAAAAACATCGAT
TTCAAACAGGCTGCCGCCCCATCTGACCGGATAACGCCATTTTTCCATTTTAAACGGGCA
CATCGTTTCCATCATCTTTTCCGCATCGGCAAGCGGGATTTCGTATTCAAACTCACTGCG
GCTGATTTCCGAAATATAGCCTTTCAGCGTCAGCCACGCCTGTTTTCCGGCAATGCGGAC
ACGGACGGTGCGTTCTTTTTCAACAGACAGATAACCCTGCCTCAACAGCAGCGGTTCGTC
GGCGTATTGCCGCCAGTTGTCGTTTCCAATCAAAAAACGGCGTTCGATTTCTATCGGCAT
AAGATGCTCCGTCAAAACGGTTTGAACACGACCAGATACAGCGCGGCAACCATCAGCAGC

ACGGGGATTTCGTTGAACACGCGGTACCAGCGGTGTGAAAAAGCATTGCTGTAATCCTGA
AAACGGCGCAGCAGCACGCCGCAATACAACTGGTAAGCCAAGAGCATCAAGCCCAAACAC
AGTTTGACGTGTACCCAGCCGCTGCCCCACCAGCCGGCGGCAAACGGTATCGCCGCGCCG
AACACGACCGCGCCGAAGCCCAACGGCGACATAAAACGGTACAGCCGCACCGCCATGCCC
GACAGACGCACATACTCGGGATTGCCGCGCGGCACATCAATCATCGCCATATTGACGAAA
ATCCTCGGCAGGTAAAACAGCCCTGCAAACCACGAAATGACAAAAAACAAGTGAAACAGC
TTGAACCAAGAAAACATCATCGCCCACACCCTGCCGAAAAGCGGTATTGTACAGGCAAAC
CGCTTGGGAAACGTGATAAAATCAGGCGGATAAACAAATCGAATAAATCCTTACCGCAAA
ACGGAGGCAAAATGCTCAAATCCATCGAACTCAATTCCCACATCCGCAACCGCCTTGCAG
AATATCTGAAAGGCAGGGGTATGGATTTTCAGACGGCAATGCAGGAAGAAAAAGGCAACA
AAGAAATCGCCGCCATCGTCCACAGCGGTTTGCCCACTCTGGTCCGCAAACTGTATTCCG
AACAAAAAATGCAGAAGTTTTTTTGGGAAAAGCGGGATTTGATTGCCGACTACATCAGCC
GCCGGATGCAGGGATAGGTGGCTGAAATCTGTTTTCAGGCAAGTGAAAAGACAATATGGC
AGATTGAAATTACGCTTATCGTCATTCCCGCCCGCGCGGGAATCCGACTTGTTTGGTTTC
GGTTATTTTTCGTTTCGTAACTTTTGAGCCGTCATTCCCGCGCAGGCGGTAATCCGGCTT
GTTCGGTTTCGGTTCTTTTTCTCGTTTCGGGTGATTTCTAAACCGTCATTCCCGCGCAGG
CGGGAATCTAGGTCTTTAAACTTCGGTTTTTTCCGATAAATTTTTGCCGCATTAAAATTC
TAGATTCCCGCTTTCGCGGGAATGACGGCGGAGGGTTTTTAGTTTTCCCGAAAATGCACA
TCATCCAAAATCCCGTTATTCCCACAAAACAGAAAATCAAAAACAGCAACCTGAAATCCC
GTCTTTCCCGCGCAGGCGGTAATCTGAACACGTCCGTAGTGAAACCTATATCCCGTCATT
CGCACGAAAGTGGGAATCCAGGATGCAGGGAAAACCGTTTTATCCGATAAGTTTCCGCAC
CGAAAGGTCTAGATTCCCGCTTTCGCGGGAATGACGGCGGAGGGTTTTTAGTTTTCTCGA
TAAATGCACATCATCCAAAGTCCCGTTATTCCCACAAAAACAGAAAATCAAAAACAACAA
TCTGAAATTCCGTCCTTCCCGCCTGTGCGGGAATCCGGCTTGTTCGGTTTCGGTTCTTTT
TCTCGTTTCGGGTGATTTCTAAACCGTCATTCCCGCGCAGGCGGGAATCTAGGTCTTTAA
GCTTCGGTTTTTCTTGATAAATTCTTGCCGCATTAAAATTCTAGATTCCCGCTTTCGCGG
GAATGACGGCGGAGGGTTTTTGTTTTCCCGATAAATGCACATCATCCAAAGTCCCGTTA
TTCCCACAAAAACAGAAAATCAAAAACAGCAACCTGAAATCCCGTCCTTCCCGCGCAGGC
GGTAATCTGAACACGTCCGTAGTGAAACCTATATCCCGTCATTCGCACGAAAGTGGGAAT
CCAGGATGCAGGGAAAACCGTTTTATCCGATAAGTTTCCGCACCGAAAGGTCTAGATTCC
CGCTTTCGCGGGAATGACGGCGGAGGGTTTTTAGTTTTCTCGATAAATGCACATCATCCA
AAATCCCGTTATTTCCACAAAACAGAAAATCAAAAACAGTAACCTGAAATCCCGTCATTC
CCGCGCAGGCGGGAATCCGGCTTGTTCGGTTTCGGTTCTTTTTCTTGTTTCGGGTGATTT
CTAAACCGTCATTCCCGCGCAGGCGGGAATCCAGACCTTTAAACCCCGACCATCCTTGAT
AAATTCTTGCGGCATTAAAATTCTAGATTCCCGCTTTCGCGGGAATGACGGCGGAGGGTT
TTTGCTTTTCCTGATTTTTCATTGCGATGTAGTATAATGTAGTATATAATCATTATAAT
TTTAACACTTGACAAAGGAAAATTTCTCATGACACTGAAAGCAAGCAAGCAAGCAAGCAA
GCAAGCAAGCAAGCGGTCGGGTTAATCTATTAACATTATCTGTTTTATCGCTGTTTTGCA
CGCCATATGTTTGAGGTTCGGATGCGTACGATCCCGTCAAAGAAGCCGAGATTAAAAACA
AATTTATTTTAGAAGCGGCGGAAGACAGAAATTCCCACGTTTGGCGCGGCCCGTGCAGCA
TATCTTTTGATTGCTTCGGTATGTTCAGAGCTCAGCTTGGTTCAAATACTCGTTCTACCA
AAATCGGCGACGATGCCGATTTTTCATTTTCAGACAAGCCGAAACCCGGCACTTCCCATT
ATTTTTCCAGCGGTAAAACCGATCAAAATTCATCCGAATATGGGTATGACGAAATCAATA
TCCAAGGTAAAAATTACAATAGCGGCATCCTCGCCGTCGATAATATGCCCGTTGTCAAAA
AATATATTACAGAGAAGTATGGGGCTGATTTAAAGCAGGCGGTTAAAAGTCAATTACAGG
ATTTATACAAAACAAGACCGGAAGCTTGGGCAGAAAATAAAAAACGGACTGAGGAGGCGT
ATATAGCACAGTTTGGAACAAAATTTAGTACGCTCAAACAGACGATGCCCGATTTAATTA
ATAAATTGGTAGAAGATTCCGTACTCACTCCTCATAGTAATACATCACAGACTAGTCTCA
ACAACATCTTCAATAAAAAATTACACGTCAAAATCGAAAACAAATCCCACGTCGCCGGAC
AGGTGTTGGAACTGACCAAGATGACGCTGAAAGATTCCCTTTGGGAACCGCGCCGCCATT
CCGACATCCATACGCTGGAAACTTCCGATAATGCCCGCATCCGCCTGAACACGAAAGATG
AAAAACTGACCGTCCATAAGGATTATGCGGGCGGCGCGGATTTCCTGTTCGGCTACGACG
TGCGGGAGTCGGACGAACCCGCCCTGACCTTTGAAGACAAAGTCAGCGGACAATCCGGCG
TGGTTTTGGAACGCCGGCCGGAAAATCTGAAAACGCTCGACGGGCGCAAACTGATTGCGG
CAAAAACGGCGGATTCCGGTTCGTTTGCGTTTAAACAAAATTACCGGCAGGGACTGTACG
AATTATTGCTCAAGCAATGCGAAGGCGGATTTTGCTTGGGCGTGCAGCGTTTGGCTATCC
CCGAGGCGGAAGCGGTTTTATATGCCCAACAGGCTTATGCGGCAAATACTTTGTTTGGGC
TGCGTGCCGCCGACAGGGGCGACGACGTGTATGCCGCCGATCCGTCCCGTCAAAAATTGT
GGCTGCGCTTCATCGGCGGCCGGTCGCATCAAAATATACGGGGCGGCGCGGCTGCGGACG
GGTGGCGCAAAGGCGTGCAAATCGGCGGCGAGGTGTTTGTACGGCAAAATGAAGGCAGCC
GACTGGCAATCGGCGTGATGGGCGGCAGGGCCGGCCAGCACGCATCAGTCAACGGCAAAG
GCGGTGCGGCAGGCAGTGATTTGTATGGTTATGGCGGGGGTGTTTATGCTGCGTGGCATC
AGTTGCGCGATAAACAAACGGGTGCGTATTTGGACGGCTGGTTGCAATACCAACGTTTCA
AACACCGCATCAATGATGAAAACCGTGCGGAACGCTACAAAACCAAAGGTTGGACGGCTT
CTGTCGAAGGCGGCTACAACGCGCTTGTGGCGGAAGGCATTGTCGGAAAAGGCAATAATG
TGCGGTTTTACCTACAACCGCAGGCGCAGTTTACCTACTTGGGCGTAAACGGCGGCTTTA
CCGACAGCGAGGGGACGGCGGTCGGACTGCTCGGCAGCGGTCAGTGGCAAAGCCGCGCCG
GCATTCGGGCAAAAACCCGTTTTGCTTTGCGTAACGGTGTCAATCTTCAGCCTTTTGCCG
CTTTTAATGTTTTGCACAGGTCAAAATCTTTCGGCGTGGAAATGGACGGCGAAAAACAGA
CGCTGGCAGGCAGGACGGCACTCGAAGGGCGGTTCGGTATTGAAGCCGGTTGGAAAGGCC
ATATGTCCGCACGCATCGGATATGGCAAAAGGACGGACGGCGACAAAGAAGCCGCATTGT
CGCTCAAATGGCTGTTTTGATGCGTCGGGAAATGTTTTGACGCACAGGCGGTACACCGGC
ACGGCACCGCGCGCCGCCCCGCAAACCAATCCGAACCCTGCCGCCCCGAAGGGCGGGGCA
TAATGATGAAACCGGCGGAAAACCGCCGGTTTTTTGCCGCCGTTTGAAACCCGATTCTGG
CTTCAGACGGCATTGTCGCGGCATCGGGCGGCAGGGTTTGGAACAGCGGCATAAAAAACT

GATACAATCCGCCGATTGATAATGGTTATTTTTATTTTTGTGGGAAGACATTTATGCCT
GCACGAAACAGATGGATGCTGCTGCTGCCTTTATTGGCAAGCGCGGCATATGCCGAAGAA
ACACCGCGCGAACCGGATTTGAGAAGCCGTCCCGAGTTCAGGCTTCATGAAGCGGAGGTC
AAACCGATCGACAGGGAGAAGGTGCCGGGGCAGGTGCGGGAAAAAGGAAAAGTTTTGCAG
ATTGACGGCGAAACCCTGCTGAAAAATCCCGAATTGTTGTCCCGCGCGATGTATTCCGCA
GTGGTCTCAAACAATATTGCCGGTATCCGCGTTATTTTGCCGATTTACCTACAACAGGCG
CAGCAGGATAAGATGTTGGCACTTTATGCACAAGGGATTTTGGCGCAGGCAGACGGTAGG
GTGAAGGAGGCGATTTCCCATTACCGGGAATTGATTGCCGCCCAACCCGACGCGCCCGCC
GTCCGTATGCGTTTGGCGGCAGCATTGTTTGAAAACAGGCAGAACGAGGCGGCGGCAGAC
CAGTTCGACCGCCTGAAGGCGGAAAACCTGCCGCCGCAGCTGATGGAGCAGGTCGAGCTG
TACCGCAAGGCATTGCGCGAACGCGATGCGTGGAAGGTAAATGGCGGCTTCAGCGTCACC
CGCGAACACAATATCAACCAAGCCCCGAAACGGCAGCAGTACGGCAAATGGACTTTCCCG
AAACAGGTGGACGGCACGGCGGTCAATTACCGGCTCGGCGCGGAGAAAAAATGGTCGCTG
AAAAACGGCTGGTACACGACGGCGGGCGGCGACGTGTCCGGCAGGGTTTATCCGGGGAAT
AAGAAATTCAACGATATGACGGCAGGCGTTTCCGGCGGCATCGGTTTTGCCGACCGGCGC
AAAGATGCCGGGCTGGCAGTGTTCCACGAACGCCGCACCTACGGCAACGACGCTTATTCT
TACACCAACGGCGCACGCCTTTATTTCAACCGTTGGCAAACCCCGAAATGGCAAACGTTG
TCTTCGGCGGAGTGGGGGCGTTTGAAGAATACGCGCCGGGCGCGTTCCGACAATACCCAT
TTGCAAATTTCCAATTCGCTGGTGTTTTACCGGAATGCGCGCCAATATTGGATGGGCGGT
TTGGATTTTTACCGCGAGCGCAACCCCGCCGACCGGGGCGACAATTTCAACCGTTACGGC
CTGCGCTTTGCCTGGGGGCAGGAATGGGGCGGCAGCGGCCTGTCTTCGCTGTTGCGCCTC
GGCGCGGCGAAACGGCATTATGAAAAACCCGGCTTTTTCAGCGGTTTTAAAGGGGAAAGG
CGCAGGGATAAAGAATTGAACACATCCTTGAGCCTTTGGCACCGGGCATTGCATTTCAAA
GGCATCACGCCGCGCCTGACGTTGTCGCACCGCGAAACGCGGAGTAACGATGTGTTCAAC
GAATACGAGAAAAATCGGGCGTTTGTCGAGTTTAATAAAACGTTCTGATTGCTGTTCCTT
TTCGGAGGAAACCCTGCCGGCGGCGGTATCACGGCGGGCATCGGCGGCTTTCGGGCGGTG
CTTTGCGTGCCGCCGCGTGTGCGGAAACGCATTCCGGTTTTTCCGGCATAACGGCGATGC
GAGGTAAAATGCCGTCTGAAACCCGATTCGGGCTTCAGACGGCATTGTCGCGGTTGCGGC
GGGCGGGTTCACCAGATTCCGTCAAAGGTTTTCGCGCCGCGCCAAAATTTCCACCTGTCG
GCGGGTTTGAAGGTCAGCGTACCGCCGTGTTGTCCGTCCGTGGTGATGTCCAGCCGTTTG
ATTTTGCCGGTGCGGACGGCTTCGTAGATTGGTGCGAACCAGCGTTCTTCCCACTGCTGC
AATATTGCCGCATACCGCTCCCTGTCCCCTGTCAGGGCGGTCAGGCGCAAATCGTCCATA
AACAGGATATGGTGCGTGTCGGGCAGGTGTGCCGCCGTTTCTTCATAGGCGCGGAAGTTG
TCGGGTAATGCGCGGCGGTCGGAGTGGAAACGGCTCCAAACCGTATCGGCGAAAAGCGTG
CCGCCTTGCGCGCCGCCGTTTGTGCCGTCCCAAAGCCATAAGCCGTTCAACTCGGGCAGC
CCGCGTTTCTTGCGGTTATGGTTGACGGGGTGCGCCGCCAGCCACATTTGGATTTCGGTT
TGGACGCGCAGCCATTCCAACGCATCTTCTCCGTCCGGCTGATCGTCAGCGCCCAACAAT
CCGCCCAAGTCCAAAACGGGCTTCGCGCCCCAGCGGTACGCGCAAGGAAGGGAAACCAGC
CATAATTCGGGCAGGACGGGAACGAAACGCCATGGAATGTCGCCGTAAAACGCCGACAGG
TCGCGGCAGATCCGTTCCGCTTCATCCGTACCGACGTTCAGATATTCCGCCGTTAGCACA
TTTGCCTGATGCATCCCCATCTTTTGCCAGACGGGCGTGGCGAGCGCGACGGCTTCAGAC
GGCATATTCAGGCTTTGCGCCGCGCGTTCCACCAGTCTGCCGCACCACAAATAACGCGCG
TAAAATGCCGAAGCCGTGCAGCTTTGGCGGTGCAGCGAGCCGTATTGCAGGATTTTGTTG
AAAGCGTGCAGGCATAGAGGTATTCGGATTTCGTCTTCATCCAAATTGAGCGAGGGAATG
GCGAGGGTGAGTTTCATCGTTTGACGTTTCAGAAATGCAGGTCAGGCGCAACATTATAGA
GGATTCGGCGCAAACGCCGTCAAAAAGGAACAATATGGCTGTCTTCCCACTTTCGGCAAA
ACATCGGAAATACGCGCTGCGTGCGCTTGCCGTTTCGATTATTTTGGTGTCGGCGGCATA
CATTGCTTCGACAGAGAGGACGGAGCGCGTCAGACCGCAGCGCGTGGAACAAAATCTGCC
GCCGCTGTCTTGGGGCGGCAGCGGCGTTCAGACGGCATATTGGGTGCAGGAGGCGGTGCA
GCCGGGCGACTCGCTGGCGGACGTGCTGGCGCGTTCGGGTATGGCGCGGGACGAGATTGC
CCGAATCACGGAAAAATATGGCGGCGAAGCCGATTTGCGGCATTTGCGTGCCGACCAGTC
GGTTCATGTTTTGGTCGGCGGCGACGGCGGCGCGCGCGAAGTGCAGTTTTTTACCGACGA
AGACGGCGAGCGCAATCTGGTCGCTTTGGAAAAGAAAGGCGGCATATGGCGGCGGTCGGC
TTCTGAGGCGGATATGAAGGTTTTGCCGACGCTGCGTTCGGTCGTGGTCAAAACGTCGGC
GCCCGGTTCGCTGGCGCGGGCGGAAGTGCCCGTCGAAATCCGCGAATCCTTAAGCGGGAT
TTTCGCCGGCCGCTTCAGCCTTGACGGTTTGAAGGAAGGCGATGCCGTGCGCCTGATGTA
CGACAGCCTGTATTTCCACGGGCAGCAGGTGGCGGCGGGCGATATTTTGGCGGCTGAAGT
CGTTAAGGGCGGCACAAGGCATCAGGCGTTCTATTACCGTTCGGACAAGGAAGGCGGAGG
GGGCGGCAATTATTATGATGAAGACGGCAAGGTGTTGCAGGAAAAAGGCGGCTTCAACAT
CGAGCCGCTGGTCTATACGCGCATTTCTTCGCCGTTCGGCTACCGTATGCACCCCATCCT
GCACACATGGCGGCTGCACACGGGCATCGATTATGCCGCACCGCAGGGAACGCCGGTCAG
GGCTTCCGCCGACGGCGTGATTACCTTTAAAGGCCGGAAGGGCGGATACGGCAACGCGGT
GATGATACGCCACGCCAACGGTGTGGAAACGCTGTACGCGCACTTGAGCGCGTTTTCGCA
GGCGGAAGGCAATGTGCGCGGCGGCGAGGTCATCGGTTTTGTCGGTTCGACCGGGCGTTC
GACCGGGCCGCACCTGCATTACGAGGCGCGCATCAACGGGCAGCCCGTCAATCCTGTTTC
GGTCGCATTGCCGACACCGGAATTGACGCAGGCGGACAAGGCGGCGTTTGCCGCGCAGAA
ACAGAAGGCGGACGCGCTGCTTGCGCGCTTGCGCGGCATACCGGTTACCGTGTCGCAATC
GGATTGAAGTTTGAACCGGCGACGAAAACAATGCCGTCTGAAAACCTGCAAACAGGTTTT
CAGACGGCATTTATAGTGGATTAACAAAAATCAGTACGGCGTTGCCTCGCCTTAGCTCAA
AGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATTTGTATT
GTCTGCGGCTTCGTCGTCTTGTCCTGATTTTTGTTAATCCACTATGCAGTTGATTAAAAC
AAAACTAAGCCAAGGAAGCACTGCCGTCATTCCCGTACGGGCGGGAATCCTGACACCACG
GCACGGAAACCCATCCGCTGTCATTCCCACGAAAGCGGGAATCTAGAAATACAACGCGGC
AGGAGTTTATCGGAAATGACTGAAACCCAACGTACCGGATTCCCGCTTTCGCGGGAATGA
CGAAGTGGGCGGGAATCCGGATTTATCCGTTCCGACAGTGTTTGCAAATAAAAGAAAACC

CAACCGTCCCGATTCCCGGCAGGGCTGTTTTACGGATTTTGCAGCGAGGGCGCGGGGCGG
TCTTGCGCCTGTTTGGTTTGCAGGGTTGTCAGTTTTTTCGTCAGCAGATTCAGTATCACG
CCGTAGGCGGGCAGGAAGAAGAGGGTGCAGACGGTAAGTTTGAACAGGTAATCGACAAAA
GCGATGCCCTGCCAGTTTGCCGCCATAAATCCATCGCTGCTTGCGTAGAAGGCAACGGCG
AAAAATACCAGCGTATCCAAGGCGTTGCCGATGACGGTTGATGCGGTCGGTGCAATCCAC
CACGCTTTCAGACGGCGTAATTTGTTGAATACAAAAATATCAAGGATTTGTCCGATCGCG
TAGGCGGCAAAGCTGGCTAAGGCGATGCGTCCGACAAAGGTGTTGAATTCGGACAGCGCG
CCCAAGCCTGTCCAACTGCCGTTGTGGAACAAAACGGAAAAGACGTAGGAAAGCAAAAGG
GCGGGGAACATCACCCAAAAGATAATCCGCCGTGCCAAGTGAGAACCGAAAATGCGGACG
GTCAGGTCGGTGGCAAGGAAGATGAAGGGAAAGGAAAATGCGCCCCAAGTGGTGTGGATG
CCGAAAATTTGGAAAGGGAACTGCACCAGATAGTTGCTGGCGGCGATCATGAGGATATGA
AAAAGCACCAGCCGGAAGAGTGCCTTCTGTTGCTGTGCGGCGGTAAATGCGTACATAAAA
ATCTTTCGGAAAGGCGTTCAGACGGCATATCGTATCGAAGGAATGCCGTCTGAAATATGG
GAAGGATGGTTTATTGTGCGTCGTGCTCAAACAAGCGTTTGCGTGCCAATGTTTCGAACT
CGGTGCCTGCTTTTCCGTAGTTGGCAAACGGATGAATGGCGATGCCGCCGCGCGGTGTGA
ACTCGCCGAATACTTCGATGTATTTCGGATCCATCAGGGCAATGAGGTCTTTCATGATGA
TGTTGACGCAGTCTTCATGAAAATCGCCGTGGTTGCGGAAGCTGAAGAGGTAGAGTTTCA
GGGATTTGCTTTCCACCATTTTGATGTGCGGAATGTAGCGGATGTAGATGGTGGCGAAGT
CGGGCTGCCCGGTCATGGGGCAGAGGCTGGTGAACTCGGGACAGACGAATTTGACGAAAT
AGTCGTTGTCGGGATGTTTGTTGTCGAATGCTTCGAGAATTTCAGGCGCGTAGCCGGTCG
GATATTGGGTTTTTTGATTGCCCAAAAGAGAGATGCCTTGCAGCTCTTCGTTGTTGCGGG
ACATGAGGGTTTCCTTAGTTTTTTAATGTGGGAGGTTTTCGAACCACGGGCGGCGATTGT
AATATAAGCGGCGGTATCTGTGTAGTTTTCTTCAGACGGCATGGTTTGGACGGCGGCGTT
TTCCGTGTCATATATAGTGGATTAACAAAAACCAGTACGGCGTTGCCTCGCCTTAGCTCA
AAGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATTTGTAC
TGTCTGCGGCTTCGCCGCCTTGTCCTGATTTTTGTTAATCCATTATATAAACGAAATATA
TTTTCAGTTTTGCCGCCTGAAGCGTTGTTTTTTGAATATTGCATCTAAAATACTGACTTG
ATTGCGTTATTGCGCGGATATAGAATCTGCTTCCTATTGAAAGAACATTGTTTATATGAA
ATCAGGAAATTCGGAACCCAATCTTATGGATACGCACACGGACGAAACAAAACTTCAAAA
CACGCAAGCCAAACGCAAACGCCGCCTGACGGCATTGACGCTGCTGTTCGCGCTTGCCGC
CGCAGCCGCCGGGTCGGCGTTTTTTTTATGGTGGCAGCACGAAGAGGAAACGGAAGACGC
TTATGTTGCCGGACGCGTGGTTCAGGTTACGCCGCAAAAGGGCGGTACGGTGCGGAAGGT
TTTGCACGACGATACGGATGCCGTGAAAAAAGGCGACGTGCTGGCGGTATTGGACGACGA
TAATGATGTGCTGGCTTACGAGCGGGCAAAAAACGAGCTGGTTCAGGCGGTGCGGCAAAA
CCGCCGGCAAAATGCCGCCACTTCGCAGGCGGGGGCGCAGGTTGCCTTGCGCCGGGCGGA
TTTGGCACGCGCACAGGATGATTTGCGCCGCCGGTCTGCTTTGGCGGAATCGGGCGCGGT
GTCCGCCGAAGAGCTGGCACACGCCCGTGCGGCAGTGTCTCAGGCGCAGGCGGCGGTCAA
AGCGGCTTTGGCGGAAGAATCTTCGGCACGTGCGGCTTTGGGCGGTCAGGTTTCTTTGCG
CGAACAGCCGGCGGTTCAGACGGCAATCGGCAGGTTGAAAGATGCGTGGTTGAACCTTCA
GCGGACGCAAATCCGCGCGCCGGCGGACGGTCAGGTGGCGAAGCGTTCGGTGCAGGTCGG
GCAGCAGGTGGCGGCAGGCGCGCCGCTGATGGCGGTGGTGCCGCTGTCGGATGTGTGGGT
GGATGCTAATTTTAAAGAGACGCAGTTGCGGCATATGAAAATCGGACAGCCTGCCGAGCT
GGTGTCCGATTTGTACGGCAAACAAATTGTTTATCGCGGCAGGGTGGCAGGTTTTTCGGC
AGGTACGGGCAGCGCGTTTTCGCTGATTCCGGCGCAAAACGCAACGGGCAACTGGATTAA
AGTGGTGCAGCGCGTCCCCGTCCGTATCGTGCTGAACCGCGAAGATGTGGACAGGCATCC
GTTGCGTATCGGTTTGTCGATGACGGTTAAAGTGGATACTTCCGCCGCAGGCGCGCCTGT
TTCAAAAACGCCGGGTGCGGCATTGCCGGAAATGGAAAGTACCGACTGGTCGGAAGTCGA
TCGGACGGTCGATGAAATCCTCGGGCAATCCGCGCCCTGATGCCGTCTGAAACGGAGGAC
ACAATGGATTATCCACCGCTTAAGGGTGCGGCATTGGCGTGGGTTACCCTGTCTTTGGGG
CTTGCCGTATTTATGGAAGTTTTAGATACGACTATCGCCAATGTCGCCGTTCCCGTCATC
GCCGGCAACCTCGGTGCGGCAACCACTCAGGGGACGTGGGTCATCACTTCCTTTTCTGTG
GCAAACGCCGTTTCCGTGCCGCTGACGGGCTTTTTGGCAAAACGCATCGGCGAGGTCAAA
TTGTTTACCGCCGCCGCTGTCGGTTTCGTCATCACATCGTGGCTGTGCGGTATTGCCCCC
AACCTTCAGTCGCTGGTTGTTTTCCGCATCTTGCAGGGCTTTATCGCCGGGCCGCTGATT
CCCTTGTCGCAAAGCCTGTTAATGGCATCCTATCCGCCCGCAAAACGGACGCTGGCACTG
GCATTGTGGGCAATGACCGTCGTTGTCGCCCCTGTTCTCGGGCCGATACTCGGCGGCTGG
ATTTCCGGAAACTGGCATTGGGGTTGGATTTTCTTCATTAATATCCCTATCGGTATCATA
TCGGCATGGATTACATGGAAACATTTGAAATATCGGGAAACGGAAACCGTTAAAATGCCG
ACCGACTATGTCGGGCTTACATTGATGGTAGTCGGTATCGGCGCGTTACAGATGATGCTG
GACAGGGGTAAGGAACTCGACTGGTTCGCCTCTGGAGAAATCATTACCTTGGGCGTAGTC
GCACTGGTGTGCTTGTCGTATTTTATTGTTTGGGAATTGGGAGAAAAATATCCGATTGTC
GATTTATCGCTGTTTAAAGATCGGAATTTTACCGTCGGCGTCATTGCCACGTCATTGGGT
TTTATGGTGTATATGGGGACGCTGACCCTGCTGCCGTTAGTGTTGCAGACCAACCTGGGC
TATACCTCCACGTGGGCAGGGCTTGCCGCCGCACCTGTCGGCATCCTGCCTGTTTTCCTG
TCTCCGTTAATCGGCAGGTTCGGCAATAAAATCGATATGCGCCTGTTCGTAACTGCCAGC
TTCCTGACCTTTGCCTTTACTTTCTATTGGCGTACGGATTTTTATGCCGATATGGATATT
GGCAACGTCATCTGGCCGCAGTTTTGGCAGGGTGTCGGTGTCGCCATGTTTTTTCTGCCG
CTGACCACCATCACACTGTCGCATATGAAGGGCGGGCAGATTGCCGCCGCAGGCAGCCTG
TCGAATTTCTTGCGCGTGCTGATGGGCGGTGTCGGCGTATCCGTCGTCAGCACCCTGTGG
GAACGGCGCGAAGCGTTGCACCACACACGCTTTGCCGAACACATCACGCCCTATTCCGCA
ACATTGCACGAAACGGCCGCTCATTTGTCCCAGCACGGCGTTTCCGACATTCAAACCCTA
GGCATCATCAACAATACCATTACCCAGCAGGGTTTTATTATCGGCTCGAACGAAATCTTT
ATGGCGGGCAGCTTGTTATTCATTATCATGATACCCGTCATATGGCTGGCAAAACCGCCG
TTCCACAACGGCGGCGGCGGTGGACATTGAGGGATTTGAAAACTTGAAATGCCGTCTGAA
AATACTGGAAATATGTTCGGACGGCATTTTGAATGCAGCAGTTCCCGAAATCCGCTATAA

TCGCGCCCCATCTGTTTCGCACCTGCAAACGTTCCACAGATGCGACAATCGGAAGGATTA
TCCGCGCAAAACAGCCGTTTTTCTTTAAAACACTTGAACTAACACTGTTTTTCGTGGTAT
AAATCGCGTTTTACTATTTTAGAAGTTTGGAGACTGATTATGGCACGAGTTTGCAAAGTG
ACCGGCAAACGCCCGATGTCCGGCAACAACGTATCGCACGCCAACAACAAAACCAAACGC
CGTTTTTTGCCCAACTTGCAATCACGTCGTTTTTGGGTAGAAAGTGAAAACCGCTGGGTT
CGCCTGCGCGTTTCCAACGCTGCACTGCGTACCATCGACAAAGTAGGCATTGATGTCGTA
TTGGCTGATTTGCGTGCTCGCGGCGAAGCTTAATTTAAACACTATTTAATTAAGGATTAC
TGCAATGCGCGATAAAATCAAACTGGAATCCAGTGCAGGTACTGGTCACTTCTACACCAC
TACCAAAAACAAACGCACTATGCCCGGCAAATTGGAAATCAAAAAATTTGACCCAGTTGC
CCGCAAACACGTAGTGTATAAAGAAACTAAACTGAAATAATTTCAGTTTGAAAGCAAAGC
CTCCGACTGCTCGGAGGCTTTGTTATTTTTATCGTGTTTCCTTTCCGCTTGAAACATCTG
CCGTATGCGAATCTGCTGCAAACCGTCTGCCAAGGATATGAAAACCGCAAAACGGTTCAT
AACACAAAAATGCCGTCTGAAACGTTTCAGACGGCATTTCGGCAGTTTTCAACCGGTCAG
TTGTTTGGTGATCAGTTTCTTCAGCGGTGGGAAATTGTTGCTGGCACGCAATACCAAGCC
GCGCAACAGTTTTGCCGGTGCGGTCTCATTGGTAAACAGTTTCAGCATCATATTGGTTCC
GTGATAAAGCGGATGGGCGTGCAGCATATGTTTGCTGCTGTATTTTTCCAATAATGAAGA
TGCACCGATGTCTTGACCGCGCTGTTCGGCTTCGAGTATCAGTTTTGCCAAAATATCTGC
GCTGGAAAGCCCCAAGTTGAAACCGTGTGCTGTAACGGGGTGCATACCGACGGCGGCATC
GCCAATCAGCGCGCTGCGTTTGCCGTAGAAACGTTTGGCAATCATGCCGACAAGGGGGTA
ATGGTGGATGCTGCTGACCAATTCCATATCGCCGAGCCTGCCCTTGAGCTGTTCTTTTAC
GCTTGCCGCCAATTCTTCGGGCGAAAGGTTTTGAACGCTGTTGATTTTATCGGTATCGAC
GGTAATGACGGTATTGGTCAGGTGCTCTTCCAGCGGCAGCAGTGCGATGGTGCGTCCGTA
ATGGAAGCATTCGTAAGCGGTATGTTGGTTGGAAAGGGTATGTTTCATACGGCAGACGAA
CATGGTTCGGCTGTAATCGTGCATATCGGAGGAGATACCGAGTTGTCGACGGGTTTGCGA
GAAGCGGCTGTCTGCCGCCAAAAGCAGGCGTGCAGTCAGTATTTTGCCGTTTTCCAAAAT
GACTTGTGCTTCGTTGTCAGATGTTTTGACTTCTTTGACAACCGTATCGGTCAGAATGCT
GACATTGTCGAGTTGTGATACGACTTCATAGGCGGCGCGGCGGATATTGTGGTTGGAAAT
CAGATAGCCCAAACAGTCGGCAGGTTCGCCGCGCGCTTCAGTCGGTTGGGGAAAGTGGAG
CTGGTAGTCGGAACGTCCGTTCAGCACTTTGGCATCGCGCAAAGGGTAGATTTCGTTTTC
GGGAATTTTGTCCCACATACCCAAACGCTGCATGATTTCGCGGGAAAAATGGGTCAGGGC
GATTTCGCGTCCGTCATATGGAGGATTTTGCAGAACAGTCAGTGGGCTGCGTTCGATCAG
GGTAACTTTCAAACCGCTGCCGGCAAGTTCGGCTGCAAAACTTAAACCCGCCGGGCCTGC
GCCGACGACGAGGATGTCGCTGTGTAAACTCATAAAATATCCTTTGCATAGACGGATGCC
GATGATTTCAGACGGTATTTGTAAGGGTTTGAATGCCGTTTGAACTATCTGTAACAGATA
GGCGATTATATCAAAACCCACTGTTGAAGAAATATGCAGGGGAGGGTGTATGCGGATTTT
TACTTTCAGCTTAATGTGTATCAAATCGGGTGTGGGGTATGTATAGTGGATTAAATTTAA
ACCAGTACGGCGTTGCCTCGCCTTGCCGTACTATTTGTACTGTCTGCGGCTTCGTCGCCT
TGTCCTGATTTTTGTTAATCCACTATAAAAAGCCGCATCGTGAAAAGATGCGGCTTCAGG
TATCGGTTGGATTATTCTTCAGAACCGGTGTAAGGACGGATGCTGACAGTTTTACGGTTC
AGCGCGCCTTTGGTTTTGAATTCGACATAACCGTCAACTTTGGCGAACAAAGTGTGGTCT
TTGCCCATACCTACGTTGTCGCCTGCGTGGAATTTGGTACCGCGTTGGCGTACGATGATG
GAACCTGCGGGAATCAGCTCGTTGCCGTAGGCTTTAACGCCCAAGCGTTTGGCTTCTGAA
TCGCGACCGTTGCGGGTGCTGCCGCCTGCTTTTTTACTTGCCATTTGTAATGCTCCTAAG
TTTTAAGGTTAGGCGATTGCCACGATTTCGATTTGGGTGAAATTTTGGCGGTGGCCTTGG
CGTTTTTGGTAGTGTTTGCGGCGGCGCATTTTGAAGATGCGGACTTTTTCGCCACGACCG
TGTGCCACTACTTTAGCCGTTACTTTTGCACCTTCGATAAAGGGTGCGCCAACTTTTACA
GATTCGCCGTCAGCAATCATCAAAACTTCGGTCAGTTCGATTTGGCTGTCGAGTTCGGCT
GGTATCTGTTCTACTTTCAATTTTTCGCCGACGGAAACTTTATACTGTTTGCCGCCGGTT
TTTACGACCGCGTACATACTCAACTCCATAAGGGTTATGGTTAATATCCGCACACCATTG
TGCGGAACTCGGCATTGTATTGTTATTTGCCTGTTTTGTCAAAGTTTGCGCGGTTCGGAT
AACCATATGCCGTCTGAAAAGATGTACCCTGATGGCTTTGCTGATATAATTGCCCGCTAT
TTGAATCAGCTTTCAAGCGGTATCTGCCGTTTGACGGAAACGTAAACCTGAGAGTCTGCC
ATGCTCGAGAATCTGCCCTATTTCCAGCGACATCTGCCTGAAGACCTTGCCAAAGTCAAT
GAAGTCATCAACCGTGCGGTGCAATCCGATGTCGCACTGATTTCGCAAATCGGTACATAT
ATCATCAGCGCGGGCGGCAAACGCCTGCGTCCGATTATGACGATTTTGGCGGGTAAGGCG
GTCGGTTATGATGACGAGAAACTGTATTCGCTGGCGGCGATGGTCGAGTTTATCCACACT
TCCACCCTCCTGCACGACGATGTCGTCGATGAAAGCGATTTGCGCCGTGGGCGGGCAACG
GCAAACAATCTGTTCGGCAATGCGGCGGCTGTGTTGGTTGGCGACTTTTTATACACGCGC
GCCTTTCAACTGATGGTTGCCTCGGGCAGTATGCGCGTTTTGGAAGTGATGGCGGATGCA
ACCAACATTATTGCCGAGGGCGAAGTCATGCAGCTGATGAACATCGGCAATACGGACATT
ACCGAAGAACAATATATCCAAGTCATCCAATATAAAACGGCAAAATTGTTTGAAGCTGCC
GCTCAAGTCGGCGCAATTTTGGGCAAGGCTTCCCCCGAACACGAACGGGCGTTGAAAGAC
TACGGTATGTATGTCGGTACGGCATTCCAAATTATTGACGATGTGCTGGACTATTCTGGC
GAAACCGAAGAAACCGGCAAAAACGTCGGCGACGATTTGGCGGAAGGAAAACCGACTTTG
CCTTTGATTTATCTGATGCGTCAGGGTTCCGAACAGGTTGCGAACGATGTGCGTACTGCT
TTGGAAAATGCAGATCGCAGCTATTTTGAGAAAATCCACGATTATGTCGTCCGTTCGGAT
GCGTTGGCATATTCGATAGGCGAGGCGCGCAAAGCAGTCGATTGTGCCGTTACCGCCTTG
GATGCCCTGCCCGACAGCGAAGTGAAGGATGCCATGATTCAGCTGGCGAAGGAATCTTTG
GTCAGGGTGTCTTGAGGCGATGAATTTCAGTTTTGTTCCCCTGTTTCTGGTTACGCTGAT
TCTGTTGGGGGTGGTCAGCAACAACAATTCGATTACCATCTCGGCAACCATATTGCTGCT
GATGCAGCAGACGGCATTGATACAGTTTGTCCCGTTGGTCGAGAAGCACGGGTTGAATCT
CGGTATCATTCTTTTGACCATAGGGGTTTTGAGTCCGTTGGTTTCAGGAAAGGCGCAGGT
TCCTCCCGTTGCCGAATTTTTGAATTTTAAAATGATATCCGCCGTTTTTATCGGTATTTT
CGTGGCTTGGCTGGCGGGACGCGGCGTGCCTTATGATGGGACAGCAGCCTGTTTTAATTA
CAGGGCTGTTAATCGGGACGGTTATCGGGGTGGCATTTATGGGCGGTATCCCTGTCGGGC

CGCTGATTGCGGCCGGCATCTTGTCTTTTGTCGTCGGAAAGGGTTAAAATCTCCTTTTCA
TTTCGGCTCGCCATAGTTCAACGGATAGAACGTATGCCTCCTAAGCGTAAAATACAGGTT
CGATTCCTGTTGGCGAGGTTTGACGATTTCATTTGTCTGTTTCCCGTGTTGCGGGAAGTT
TCCGATATAAGGCCTTTCAGTGTTGGAGGGCTTTTTTGCCATCTGAAAACTTTTTCTTCC
TGCTTGAAAAACCGACCTTTAGGACGGTAGAATCATGAAATGATTTTCAGGCTTCGTAAA
AGATGTTCCGGCTTGGAAATCTGTTGTTTTATGATATAGTGGATTAAATTTAAATCAGGA
CAAGGCGACGAAGCCGCAGACAGTACAGATAGTACGGCAAGGCGAGGCAACGCCGTACTG
GTTTAAATTTAATCCACTATAAAAGCTGTACAGGTATAACAATGAATAAATTTGGGGATA
AGGTCGTATGAGCGTAGGTTTGCTGAGGATTCTGGTTCAAAACCAGGTGGTTACTGTTGA
GCAGGCCGAGCATTACTACAATGAGTCGCAGGCGGGTAAGGAAGTGTTGCCGATGCTGTT
TTCAGACGGTGTCATTTCGCCCAAGTCGCTTGCGGCATTGATTGCGAGGGTGTTCAGTTA
TTCGATTCTTGATTTGCGTCATTATCCGCGCCACAGGGTGCTGATGGGGGTGTTGACGGA
GGAGCAGATGGTGGAGTTCCACTGTGTGCCGGTTTTCCGTCGGGGCGACAAAGTATTTTT
TGCGGTTTCCGATCCGACACAGATGCCGCAAATTCAGAAAACCGTTTCTGCCGCAGGGAT
TGAGGTTGAGTTGGTCATTGTCGAGGATGACCAGTTGGCGGGTTTGCTCGATTGGGTGGG
TTCGCGTTCGACATCGCTGCTTCAGGAGCTTGGGGAGGGGCAGGAGGAAGAGGAAAGCCA
CACCCTGTATATCGACAACGAGGAGGCAGAAGACGGCCCTGTTCCGAGGTTTATCCATAA
GACTTTGTCGGATGCCTTGCGCAGCGGCCATCGGACATCCATTTCGAGTTTTACGAACA
CAATGCCCGTATCCGTTTCCGTGTGGACGGGCAGCTCCGCGAGGTGGTTCAGCCGCCCAT
TGCGGTAAGGGGGCAGCTTGCTTCACGGATTAAGGTAATGTCGCGTTTGGACATTTCCGA
AAAACGGATACCGCAGGACGGCAGGATGCAGCTGACCTTTCAAAAGGGCGGCAAGCCTGT
CGATTTCCGTGTCAGCACATTGCCGACGCTGTTTGGCGAAAAGGTCGTGATGCGGATTTT
GAATTCCGATGCCGCGTCTTTGAACATCGACCAGCTCGGTTTTGAGCCGTTTCAGAAAAA
ATTGTTGTTGGAAGCGATTCACCGTCCCTACGGGATGGTGCTGGTAACCGGTCCGACGGG
TTCGGGTAAGACGGTGTCGCTCTATACCTGTTTGAATATTTTGAATACGGAGTCGGTAAA
TATTGCAACGGCGGAAGACCCTGCCGAGATTAACCTGCCGGGCATCAATCAGGTTAACGT
CAATGATAAGCAGGGCCTGACTTTTGCCGCTGCTTTGAAGTCTTTCCTGCGTCAGGACCC
GGACATCATTATGGTCGGTGAGATTCGTGATTTGGAAACTGCCGATATTGCGATTAAGGC
GGCACAAACAGGGCATATGGTGTTTTCCACCCTGCACACCAATAATGCGCCGGCGACGTT
GTCGCGTATGCTGAATATGGGTGTCGCGCCGTTTAATATTGCCAGTTCGGTCAGCCTGAT
TATGGCGCAGCGTCTTTTACGCAGGCTGTGTTCGAGCTGCAAACAGGAAGTGGAACGCCC
GTCTGCCTCTGCTTTGAAGGAAGTCGGCTTCACCGATGAGGACCTTGCAAAAGATTGGAA
ACTTTACCGCGCCGTCGGTTGCGACCGTTGCCGGGGGCAGGGTTATAAGGGGCGTGCGGG
CGTGTATGAGGTTATGCCCATCAGCGAAGAAATGCAGCGTGTGATTATGAACAACGGTAC
GGAAGTGGATATTTTGGACGTTGCCTATAAGGAGGGTATGGTGGATTTGCGCCGGGCCGG
TATTTTGAAAGTTATGCAGGGCATTACTTCATTGGAAGAGGTAACGGCAAATACCAACGA
TTAGGTTTGAGAATGAAAATGCCCTCTGAAGCGTGTTTGTTTCAGACGGCATTTGACTTT
CAGGGTGTTTGCCGGGAAGGCGGGGCGGTCAGCGGTATGCCATGTCGGGTTCGGATATTT
CCGGCAAACTTTCCGTTTGGCCGGAAACCGTATATTTCCCGTCTGCCCATCCGCCCAAGT
CGATCAGTTTGCAGCGTTGCGAACAGAAGGGGCGGAATGCGTTTTCGGGTTTCCATACTA
CTGCTGTTTGACAGGTCGGACATTTGACTTGAAGGCGTGTTTGCCGCGATTCAGTCATTG
TGTTTTCCTTGTGTTGGTTTTGAGGCGAAAATCCCTGAATAAAACGCGTGCAGGCGCATT
GTTTTCTCACGCAGGCTTTTGAGGCTGCCGTCATTGAGCAGCACATCGTCTGCAAGCAGC
AGGCGTTCGGATTCGGATGCCTGATGGCTGATGACGGCCGCCACCTCGCCGCGCGTCAGC
CCGCTGCGGGCCATCACCCTGCCGATACGTTTTTCCACAGGGGCACTTATGGTCAGGACA
CGCCGTATCAGGCTGATAAATTGACGCTTTTCCGTCAGCAGCGGAATTTCGACAATGCCG
TAAGCTGCATCAGTAAAGGTTTCTTGCTGTTTTTTGATTTCTGAGAAAATCAGCGGCAAC
ATCACGGATTCGAGCAAGGCTTTTCGCGATGGGGAGGCAAAGACTTCTTTACGCAATATG
TCGCGCCGCAACAAACCCTGTGTGTCAAAAACGGTGTCGCCGAACAGCCGCCTGATTTCC
GGCAGGGCGATGCCGTCTGAAGCCGTCAGCGAGTGCGCCGCCGCGTCTGCATCGATGCGC
GGCACGCCCAAATCGGCAAAACATTGCGCGGCTGCCGATTTGCCGCTGCCGATTCCGCCG
GTCAGTCCGACCCATACCGTCATCTTACAGCACCGGATGGGTCAGCCACCAGTTGACCGC
CCGCCATACGGAATCGTTTGCCGTAAAAATTATCCAGCCCGAAACTGTCAGTGCGGGGCC
GAAGGCAAAATGCTGCCCCTTGGCGACGCGCATAACGATTGCCGCGACCAAACCGATCAG
CGAGGAAACAAAAATCAGTACGGGCAATGCGGATATGCCGACCCACGCGCCCAATGCGGC
AATCAGTTTGAAATCTCCGTTGCCCATACCGGTTTTTCCTGTGAGCAGTTTATACACTGC
ACATAAGAGCCATAATGAACCATAGCCGGCGACCGCACCTAAAACGGCAGACTGCAAAGG
CACGAAGCCGCCGTCCAAATTAAATATCAGACCCAGCCAAATTAAGGGCAGTGTCATCGA
GTCGGGCAGGTATTGGGTGTCCGCATCGATAAAGGTCAGGGAAATCAGAAACGCGGTCAG
TACCAATCCGCCCAGCGTAATCCAAGACCAGCCGTATTGCCAGGCGACCAGCCCGAACAA
TACGCCGGTCAGCAGCTCGATTAAGGGATAACGTATGCTGATTTTGGTTTGGCAGGAAGC
GCATTTGCCGCGCAGGAGCAGGTAGCTGACAATCGGGATGTTCTGCCACGCGCGTATCGG
CACGCGGCATTTGGGACAGCAGGAATCCGGTTTCATCAGGTTGAAGGTACGGCTTTCCTC
TTCGGTCAGCGGCAGGTTTAAATATTCTTTGGCAAATACCGTCCAGCCGCGTTCCATCAT
GACCGGCACGCGGTAAATGACGACATTTAAGAAACTTCCGACCAGCAGCCCGAACACCGC
TGCCAAAGGCACGGCAAACGGCGACAATACAGACAAATCAGACATATTTTGTTCTCAATG
TATTCAAAACAAAAACAAACCGGCGCAGAGCGAATCCGCGCCGGATCTGTGCGGCAAATC
AGGCGACCACGTTGCCCAAATTAAACAGCGGCAGATACATGGCGACCAGAAGCGTGCCGA
TGACCAAGCCTAAAATCACGATAATGATCGGCTCCATCATAGCGGACAGCCTGCCGACCG
CATTGTCCACCTCGTCTTCGTAAAATTCGGCGGCTTTGTTGAGCATATCGTCCAAAGAAC
CCGATTCCTCGCCGATGGAAGACATCTGCAACATCATATTGGGGAACAGTTCCGTCGCAC
GCATCCCCGAAGTCATAGACAAACCTTGGATGACGCGCGTACGGATTTCCCGGGTGGCTT
CTTCATAGATTAAATTGCCCGCCGCGCCGGCAGTGGAGTCCAATACATCGACCAAAGGCA
CGCCGTGCCGCAATCAGCGTCGCCGTCGTCCTGCCCCAGCGGGCAATCGTTCCTTTGCGGA
CAATGTCTCCGAAAATCGGCATACGCAGCAGTATGGCATCCATACGCCGTTGGATTTTAA

TCGAACGCGCCTTCAATTTAAGGAAGCCGTATATGGCAAAGCCCAGTGCGATCAGCACCA
TCCAGCCGTATGAGACGAAAAAGTCGGACATATCCATCACTGTTTGGGTCAGTGCGGGAA
GCTCCGCGCCCATATTGGCGTAAACTTCTTTAAAGGCGGGCAGTACGAAAATCATCATCA
CGAATACCAAACCGATGGCGACGGCGATGACGGATACCGGATAGGTCAGTGCGGTTTTTA
CCTTTTTGCGGATGGCCTGGGTTTTTTCTTTGTAAATTGCCAATTTGTCCAGCAGGCTTT
CCAATACGCCGCCCGTTTCGCCCGCCGCAACCAGATTGCAGTAGAAGCGGTCGAAATATT
TTGGGTGGTTTGAGAATGCGCGGCTCAACGAGCTGCCCTGTTCCACTTCGCCTCGGATTT
CCATCAGCATTTCCGTCATAGACGGGTTGCCGTGTCCGCGCGCCACGATTTCAAATGCCT
GCATCAGCGGCAGGCCCGCTTTAATCATCGTGGACAGCTGGCGGGTGAAAACGGTGATGT
CTTCTTGTGTGATTTTGCGCTTGGAGCTTGTTTTCACACGGGTAATCTGCAACGGGCGGA
TGCCGCGTTTTGCCAGTTTTTTGCGCGCCTCTTCTTCGGTAAACGCGGATACTTCGCCGT
TGACCAGTTTGTCGGAGGCGGAATGCCTGCCTTCAAAGATAAAGCGTTTTTCTTTCTTTG
CGAACAAAGAAAATCCTCCGTTTTTAGCCATATTCTAGCCCCGTAAAGTAATTGGAATAA
AATGTAAGAAACATCGTTAAAAAACAGTACCGGCGTGTTCCCGGTAAGATGAAAACCGCC
GACATCCCGCCTGCGGGCGGCAAACGGGACAGAATCGGATGCGATTATACCTTATTTAGG
CGGCTGTCCGGCATTTATGCGTACACAATAAATCTTGCAGGATATTGTTGCGGGTCAAAT
GCCGGCCGGAGCGCATTTCCGCCATATCGAAATAAGGTGCTATTGGACGCGGCGGGCGGT
GTTCCGGAGATTCGCCAAAGCCGCTGCCGTTTGTTAAACTACATTCTGCTACATTTTAAT
CCGGTTCTGAAAAATCAAGGAAAACAGATGAATGCTTTTACCCGTGCATGGTATGCGCTC
GAACGCCATTATCAGGATACGCGTCATGTCCTTTTGCGCGACCGCTTTGCCTGCGAACCG
GACCGGTTTGAGCGTATGCACGAGCGTTTGGACGGGATGTTGTTCGATTACAGCAAAAAC
CGTTTGGGCGAAGATACGCTGCAACTGCTCTGCAATCTTGCCGACGCGGCGGATTTGGAA
GGGAAAATGCGTGCTTTGCGGACGGGTGCGAAAGTCAACGGCAGCCAGGGGCGTGCCGCC
CTGCATACGGCTTTGCGCCTGCCCGACGGTGCGGATGCCGTTTATGTGGACGGCAGGGAC
GTGTTGCCCGAAATCCGCCGCGAGTTAAATCGTGCGTTGAAGTTTGCACACAGTTTGGAC
GACGGTTCGTATCAGGGGATAACCGGAAAACGGATTACGGATTTTGTCCACATCGGCATA
GGCGGATCCGACCTCGGGCCGGCAATGTGCGTGCAGGCACTTGAGCCGTTCAGACGGCAT
ATCACCGTCCATTTTGCCGCCAACGCCGATCCTGCCTGCCTGGATGCGGTTTTATGCCGT
CTGAACCCCGAAACGACAGTGTTTTGCGTTGCCAGCAAGTCCTTCAAAACACCGGAAACC
CTGCTCAATGCACAGGCAGTCAAGGCGTGGTATCGCGGTGCAGGGTTCTCGGAATCCGAA
ACGGCGTGCCATTTTTGCGCGGTGTCTGCCGACACTGCGGCAGCTGCGGCTTTTGGTATC
GCGGCGGAACGCGTGTTTGCGATGTACGACTGGGTGGGCGGACGCTATTCCGTCTGGTCG
CCCGTCGGTTTGCCCGTGATGGTTGCGGTCGGCGGGGCGCGTTTCCGCGAGTTGTTGGCG
GGGGCGCACGCGATGGACAGGCATTTTTTCAGTACGCCGACGCGTCATAATATCCCCGTT
TTAATGGCACTGATTGCCGTGTGGTACAACAATTTCCAGCACGCGGACGGGCAGACCGCC
GTTCCGTACAGCCACAACCTGCGCCTGCTGCCGGCGTGGCTGAACCAGCTCGATATGGAG
AGTTTGGGCAAAAGCCGCGCTTCAGACGGCAGTCCCGCCGTGTGCAAAACGGGCGGCATC
GTGTTCGGTGGTGAAGGGGTCAACTGCCAGCACGCCTATTTCCAACTGCTCCACCAAGGC
ACGCGCCTGATTCCCTGCGATTTTATCGTCCCGATGACGGCGCAGGGCAGAGAGGACGGA
CGCAGCCGTTTTACCGTTGCCAACGCCTTTGCCCAAGCGGAAGCCTTGATGAAGGGCAAA
ACCTTGGACGAAGCACGCGCCGAACTGGCAGATTTGCCCGAAGCGGAACGCGAACGCCTC
GCGCCGCACAAAGAGTTCCCCGGCAACCGCCCCAGCAACAGCATTTTGATTGACCGCCTC
ACGCCCTACAATTTGGGTATGCTGATGGCGGCTTACGAACACAAAACCTTCGTCCAAGGC
GCGATATGGAACGTCAACCCCTTCGATCAGTGGGGGTGGAATACGGCAAACAGTTGGCA
AAAACCATCATCGGCGAACTGGAAGGCGGCACGTCCGTACACGATGCCTCGACCGAAGGG
CTGATGGCGTTTTACCGCGAATGCCGTCTGAAAGGCGGCGGCGCGGCATAAAAGTACTGC
CGCCTTTCTGTATTGATTCGGGCGCGGAAAAGGCAATACCTGCCGCCTGCCCGATTCCGA
AACGCCAATGTTTGGCAACCGCTCGCGTATTGCTGACGAATATGCGTTTGCGTGGCACAA
TAGCGCATTCATTTCAAATGAACATACTGCTTGAAAATACCGGCAAGCGTCCCACGAAAC
ATCTCACATAAGGAAATATTATGTCTTTGCAAAACATTATCGAAACCGCCTTTGAAAACC
GCGCGGACATCACCCCGACCACCGTTACTCCCGAAGTCAAAGAAGCCGTGTTGGAAACCA
TCCGCCAACTCGATTCCGGCAAACTGCGCGTTGCCGAACGTTTGGGCGTGGGTGAGTGGA
AAGTCAACGAATGGGCGAAAAAAGCCGTGTTGCTGTCCTTCCGCATCCAAGACAACGAAG
TCCTCAACGACGGCGTGAACAAATACTTCGACAAAGTGCCGACCAAGTTTGCCGACTGGT
CTGAAGACGAGTTCAAAAACGCAGGCTTCCGCGCAGTTCCGGGTGCGGTTGCCCGACGCG
GCAGCTTTGTGGCGAAAAATGTCGTGCTGATGCCATCTTATGTCAACATCGGCGCATACG
TCGACGAAGGCGCGATGGTCGATACTTGGGCAACCGTCGGCTCTTGCGCGCAAATCGGTA
AAAACGTGCACTTGAGCGGGGGCGTCGGCATCGGTGGTGTACTCGAACCCCTGCAGGCCG
CACCCACCATCATTGAAGACAACTGCTTCATCGGTGCGCGTTCTGAAATCGTTGAGGGCG
TGATTGTCGAAGAAGGCAGCGTGATTTCTATGGGCGTGTTCATCGGTCAATCCACCAAAA
TCTTTGACCGTACAACCGGCGAAATCTATCAAGGCCGCGTACCGGCAGGTTCGGTTGTCG
TATCCGGCAGTATGCCTTCCAAAGACGGCAGCCACAGCCTTTACTGCGCCGTCATCGTCA
AACGCGTGGACGCGCAAACCCGTGCGAAAACCAGCGTCAACGAATTGTTGCGCGGCATCT
GATGCCTTAAACCGTATTTGAAACGTCCAATGCCGTCTGAAATCCGCTTCAGACGGCATT
GCCGTTTGCACGCTGCAACGTGAAAACACAGAAACAGGGACAATTTGCTATAATCAACGG
TTTAGAACGAACCGAACACTATTTGAAGGATACAAAATGGGTTTTCTGCAAGGCAAAAAA
ATTCTGATTACCGGCATGATTTCCGAGCGTTCCATCGCTTACGGCATCGCCAAAGCCTGC
CGCGAACAAGGCGCGGAACTGGCGTTTACCTACGTTGTGGACAAACTGGAAGAGCGCGTC
CGCAAAATGGCGGCGGAATTGGATTCCGAACTTGTATTCCGCTGCGATGTCGCCAGCGAC
GACGAAATCAACCAAGTGTTCGCCGACTTGGGCAAACATTGGGACGGCTTGGACGGTTTG
GTGCATTCCATCGGTTTTGCGCCGAAAGAAGCCTTGAGCGGCGACTTCCTCGACAGCATC
AGCCGCGAAGCGTTCAACACCGCACACGAAATTTCCGCATACAGCCTGCCCGCGTTGGCA
AAAGCCGCCCGTCCGATGATGCGCGGCAGAAATTCCGCCATCGTCGCCCTGAGCTACTTG
GGCGCGGTGCGCGCGATTCCGAATTACAACGTGATGGGTATGGCAAAAGCCAGCCTTGAG
GCAGGCATCCGCTTTACCGCTGCCTGTCTGGGTAAAGAGGGCATCCGCTGCAACGGTATT

TCCGCCGGCCCGATTAAAACGCTTGCCGCCTCCGGCATCGCCGATTTCGGCAAACTCTTG
GGACACGTCGCCGCCCACAACCCGCTCCGCCGCAACGTTACCATTGAAGAAGTCGGCAAT
ACCGCCGCCTTCCTGCTGTCCGACCTGTCGTCCGGCATTACCGGCGAAATCACTTACGTT
GACGGCGGTTACAGCATTAATGCCTTGAGCACCGAGGGATAATCCGCCGTTTTCAAATCC
GTGCGCCGTCCGTGCCGCATATCGGTTTCGGGCGGCGTTTTGCCGTCTGAAGCGTATTTC
TAGGGAAATGGCCGACTTACGGCAGGCGGGATGGGAAATGCGGACGCTTGTTTTAACCGA
TTGCCTTTGTGCCGACTTGCTGCAGGTGCAGCGGAAACGGTTCGGATGCGAAAATGCCGT
CTGAAACGCCAAACGGGTTTCAGACGGCATTTTTATTTAAAGCATCAGCACACTTCAAC
CAGCCAGCCGTATTTGTCTTCCGCCAAACCATACTGGATGTCGGTAATCGCCTTACGGAT
GGCATAGCCGCGTTCTTGGCTTTTCACTTCGATTTCTTTGCCGCCGATGACGAAGGAAGT
AACGGGGGAGATGAGGGCTGCCGTACCGGTCAAAATGGCTTCCGCACCGTTTTCCACCGC
AGCTTTGAGTTCGTCAACCGTGAAATTGCGTTCGCTGACGGTATAGCCCAAATCTTTGGC
AACCGTCAGTACGGAATCGCGGGTTACGCCGTGCAAAAACTCGTCGGTCAGCGGTTTGGT
AATGATTTCATCGCCGTTAATCAGGATAAAGTTGGACGCGCCGGTTTCCTGCACGTCGCC
GTTCGGGCAGAACAGGACTTGATTTGCGCCATATTCGGCTTTCGCCTTCAGCACCCAGTG
CATGGCGGAAGCGTAGTTGCCGCCGCATTTGACGCGGCCCATATGCGGGGCGCAGCGGAT
GTGTTCGGTTTCCAGCAAAATTTTGACGGGCGATCCGACTTTGAAATAGTCGCCGACGGG
GGAAGCGAAAATATACAGCAGGGCGGTTTCGGAAGGAGAACCGGCCTTGCCGATAACGGG
ATCGGTACCGATTAAGGTCGGACGCAGGTACAGGGCGGCAGGCGCATCGGGAATTTCATC
GGCGGCACGTTTGACCAATTTGATTAGCGCGTCAAGATAAGCTTCGGTTTCGGGGCGCGG
CAGGTGCAAAATGTCCGCACTTTGCCGCATACGCGCGATATTGGCAGTCGGACGGAACAG
CACGATTTTGCCGTCTGCCTGACGGAAGGCTTTCAGTCCCTCGAAACATTCGCTGCCGTA
GTGCAGGGCGTGCGGGCCCGGTGCGAGGGAGAGGTCTTGGGAAGATTGCCATTCGGTCGG
CTGCCATTTGCCTTCGCGGTAGGCGAGGACGGGCATTTGACTGTGAAAAACGCTGCCGAA
TACGGCGGGTACGGGTCTGCTCATGATGTAAAGCCTTTCTTATTCTGATATGTTTCAATG
AACGGTTTGAATTTGAAGATTGTAAAGATACGCCTGCAAACAGGGTTTTGACAAGTGCGC
GGCGGGTTTTTCTGTCGATGCGGTGTCCAATCCGTTATTTTTCAAATGGAAAGGAACGGT
GTATTTGGTAAAATTGTCGGCAATCGCATACTCCGTATGTCGTCCGAACACGCTGCCGCA
TCCTATCCGAAACCGTGCAAATCGTTTAAACTAGGGCAATCTTGGTTCAGAGTGCGAAGC
TGTCTGGGCGGCGTTTTTATTTACGGAGCAAACATGAAACTTATCTATACCGTCATCAAA
ATCATTATCCTGCTGCTCTTCCTGCTGCTTGCCGTCATTAATACGGATGCCGTTACCTTT
TCCTACCTGCCGGGGCAAAAATTCGATTTGCCGCTGATTGTCGTATTGTTCGGCGCATTT
GTAGTCGGTATTATTTTTGGAATGTTTGCCTTGTTCGGACGGTTGTTGTCGTTACGTGGC
GAGAACGGCAGGTTGCGTGCCGAAGTAAAGAAAAATGCGCGTTTGACGGGGAAGGAGCTG
ACCGCACCAGCGGCGCAAAATGCGCCCGAATCTACGAAACAGCCTTAAGAAAGCCGATAT
GGACAACGAATTGTGGATTATCCTGCTGCCGATTATCCTTTTGCCCGTCTTCTTCGCGAT
GGGCTGGTTTGCCGCCCGCGTGGATATGAAAACCGTATTGAAGCAGGCAAAAAGCATCCC
TTCGGGATTTTATAAAAGCTTGGACGCTTTGGTCGACCGCAACAGCGGGCGCGCGGCAAG
GGAGTTGGCGGAAGTCGTCGACGGCCGGCCGCAATCGTATGATTTGAACCTCACCCTCGG
CAAACTTTACCGCCAGCGTGGCGAAAACGACAAAGCCATCAACATACACCGGACAATGCT
CGATTCTCCCGATACGGTCGGCGAAAAGCGCGCGCGCGTCCTGTTTGAATTGGCGCAAAA
CTACCAAAGTGCGGGGTTGGTCGATCGTGCCGAACAGATTTTTTTGGGGCTGCAAGACGG
TAAAATGGCGCGTGAAGCCAGACAGCACCTGCTGAATATCTACCAACAGGACAGGGATTG
GGAAAAAGCGGTTGAAACCGCCCGGCTGCTCAGCCATGACGATCAGACCTATCAGTTTGA
AATCGCCCAGTTTTATTGCGAACTTGCCCAAGCCGCGCTGTTCAAGTCCAATTTCGATGT
CGCGCGTTTCAATGTCGGCAAGGCACTCGAAGCCAACAAAAAATGCACCCGCGCCAACAT
GATTTTGGGCGACATCGAACACCGACAAGGCAATTTCCGTGCCGCCGTCGAAGCCTATGC
CGCCATCGAGCAGCAAAACCATGCATACTTGAGCATGGTCGGCGAGAAGCTTTACGAAGC
CTATGCCGCGCAGGGAAAACCTGAAGAAGGCTTGAACCGTCTGACAGGATATATGCAGAC
GTTTCCCGAACTTGACCTGATCAATGTCGTGTACGAGAAATCCCTGCTGCTTAAGTGCGA
GAAAGAAGCCGCGCAAACCGCCGTCGAGCTTGTCCGCCGCAAGCCCGACCTTAACGGCGT
GTACCGCCTGCTCGGTTTGAAACTCAGCGATATGAATCCGGCTTGGAAAGCCGATGCCGA
CATGATGCGTTCGGTTATCGGACGGCAGCTACAGCGCAGCGTGATGTACCGTTGCCGCAA
CTGCCACTTCAAATCCCAAGTCTTTTTCTGGCACTGCCGCGCCTGCAACAAATGGCAGAC
GTTTACCCCGAATAAAATCGAAGTTTAACCACCACCGAAAGGAACACAAAAAATGCGCTT
ACTCCATACTATGCTCCGCGTGGGCAATCTCGAAAATCCCTCGATTTCTACCAAAACGTT
TTGGGTATGAAACTGCTCCGCCGAAAAGATTATCCCGAAGGCAGATTTACCCTTGCCTTC
GTCGGTTACGGCGATGAAACCGACAGCACGGTTTTGGAACTGACGCACAACTGGGATACG
GAACGATACGACTTGGGCAACGCCTACGGAGACATCGCGGTTGAAGTGGACGATGCCTAC
GAAGCCTGCGAACGTGTGAAGCGGCAGGGCGGAAACGTCGTCCGCGAAGCCGGGCCGATG
AAACACGGCACAACCGTCATAGCCTTCGTCGAAGAGCCCGACGGATACAAAATCGAGTTC
ATTCAAAAGAAAAGCGGCGACGATTCGGTTGCCTATCAAACTGCCTGATACCGCCGCCGC
CAATGCCGTCTGAAGCCTTTAGGGGTTTCAGACGGCATTTTGTTGCCGTCGACCTGCTGT
TTGAGCCTGTGCCGGTTCAAACTTTATCCGTTACACCGATAAGGCAAAAAAGATGCCGTC
TGAAACGGCATCCTTGATCTGCGAAAGGGCAGTTGGGAATCAAATACCCAATTCCTGCGC
CAATGCTTGGGCACGTTTGAGTACGTCGCCTTCCGCTTCTTCCAGCAATTTCTGCACTGT
CTCGGGAGCGGCATCGCGGTCGCCGATTTCGAGATACATTTCGGCAAGGTCGTATTTCGC
TTCGGAAGGCGCGTCAGAACCTACAGATTCCGAAGGGAAACTGGTATCTGCATTATTTGG
GATATTTTCTTCCGAGAGGTAGATGCTCCAATCTACCGTTTCCTCCTCGCCGTCTTTCAG
GAAGTCGGGCAAAGCGTCTGCCTCAGAGGTGTTGGAATCAGGCGTTTCCAAAGTGATTTC
CGCTGCATTTTCCTCAACGGCCGGTGCTTCAGCAGGTTGCAACAGTGCGGACAAATCATC
GGCAACGGTTTCCGCTGCATTTTCCTCAACGGCAGGTGCTTCAGAAGGTTGAAGTAATGC
GGACAAATCGTCTGCGGTGGCGTTGAAATCGGGTGTTTCGGCAACGGTTTCCGTTACATT
TTCCTCAACGGCCGGTGCTTCAGCAGGTTGCAACAGTGGGGACAAATCATCGGCAACGGT
TTCCGCTGCATTTTCCTCAACGGCAGGTACTTTAGAAGGTTGAAGTAATGCGGACAAATC

GTCTGCGGTGGCGTTGAAGTCGGGTGTTTCGGCAACGGTTTCCGTTATATTTTCCTCAAC
GGACGGTGCTTCGGCAGGTTGAAGCAATGCGGACAAATCGTCTGCGGCGGCGTTGAAATC
GGGCGTTTCAGGCGCAGTTTCCGCGACGGCATCGGTTTCGTACACTTTCAGGAAATCGTG
CAACTCTTCCGGTGTTTGGACTTCGGCAACTGTTTTTCCAAGATGGTTTCGGGCGAGGA
AGCCTTCAGGAAGCCTGCCAGTCCGGAGGGTGAGGCAGGTTTTGCGGAAGCTGTTTCTTC
TGTGCCGATATGGTTGTTTGAGGGCAGGTTGTCGGAGAAATCGGTATCGACGGTTTCCGG
TTTGTTTTCGGCAGTTTGGGCGACAGATTCCGGTTCGGGCGTGTCGATGACGATTTCGAC
AGGGTTGTACGGGTTGAAGGTCTCGGGCTCGTACACGCTGTCTGTGGATTCGATGGCGTT
CCAATCGGCATCCGCGCGTTTTTGGGTTTCTTCATCCTGCGTAAGTGCGCCGGATAAAAT
GCCGTTTTGCGCGGCTGCCAGGCTGTCGAAATCCAAGTCGATGCGGTTGGAAGGCGTATC
GGTTTCGACATCGAACGTTTGTTTTGCCGATAACTCTTCTTCAGATTCCCCATCTAAGGC
AAGTGTGTCGTTTACATCGTTTTTCGGAGCGGGTTCGGGCGTTGCCGGAGTTTCGACTTC
GGCAAAGGTGATTTCTATGCCGTCGTCTGCCGCGTCGTCAAGGTCAGGCTCTTCCTCAGG
GACGGATTCTTCGGTACGGCGCGCGCGTTTGGATTGGGCAAGGCGCAAAAGCAGCAGCAG
GGCGATTAATGCCGCGCCTCCGCCGGCAAGCAGCAAGGTGTACGAACCGCCGAACAGACC
GTCAAACAGTCCGCTTTCGGTTTCTTCTTCGGCAGAAACCTGTTCGACAGGTTCGGAAAC
GGCGTTACCGGTTTCGTCGGTCGGCGTGTCGATGGCAGAAGCGGCGGCTTCTTGGGGGGC
GGATTCGGCAGCGGTTTCCGATGCGGCAGTATTTGCAGCGGGTACAGGTTCGGGTCGAAC
GGCCGGTTTTTCCGCTTTTGCTTCGGGCGCGGCAACTTTTGCTTCAGGTTTTTCAACCGG
TTTCTCTACCGTTGCCTGTTTGGACGGTTCGGACGGCATGGATGCGGTTTCGGCTTTGGG
TTTCGCCGTTTGCGGTTTGGGTTGTTCCGCTTTGATCCTGTTCAGATTCGGAATGTGAAG
CACGCTGCCCGCACGCAGTCTGCCGTGTGCGGAAACATTTGGGTTTGCCTTCAGCAGCGC
ATCGGCAACCTGTTCGAGCGTCAGGTGTTTCGGGCGGATGGCGGCGGCAATCTGTTTGAC
CGTTTCGCCTTTGCGGACGGTATGGGTTTTGCCGTTGTATGCCGGTTTGACGGCTGCGTT
CGCGCTGTCTTTTTTATCGGTTTTGCGGAGGGCTTTGGCGTTTTGATTTTCTTGGGACTC
TGCTGTCGGAGCGGTTTTGCGGTGTGTCTTGCCGTCTGAAAGTGCAGATTTGGTTTTGGG
CGAGTAGCCGACAGGATCGAGGATGGCGGTGTATTCGCGTACCTGTGCGCCTGCGCCGAT
GCGGAACACCAGGACGGGATCGCGGACTGCCTGTTCGGAAGAAACGGCAATGACGGCTTT
GTCGCCCAACTTGTGGACTTTGGCGGTCAGGCCTTTTTCGGAAACGGTAACGCTGCCGCC
GCCTAGCAGGGCTTTGGCTTCTTCGCCGGTTACGGTAATGCTGCCGGAAAAGGGTTCGTC
AAGGTTGGACTGGATATTCAGTCCGCCCAGTCCAGCATGTGCCTGAAAGGATGCGGCAAC
TGCGACGGAGGCGGCAATCAGTTTGATTTGTCTGTTGTTTTTCAAGATGTATCCCCTGTG
GGTTGGCGGCTGAATACGGTTTGACCGCGTACAGTCTGTAAATTTCGTCATCATCGGGCA
TCGGCGGGGCAGTCGGCCGGCGGGCATTTAATATGTGAATGTACCGACCGCCGCCACATT
TTAAACGGCAATCATTCGCCGTTTTACAAATTATGACATATCTCCATCTTTTTTCAAAA
ACATCTGTGCATATTTGCATCAATCAAAACAAAATTTGTTGGTTTTGCAGGTGCAAAAAC
AGGGTTCTGCCTGTATGATTAGCGTTTATTTGATTTGCTTTCTCATTTGGATATGAAATT
CGTCAGCGACCTTTTGTCCGTCATCCTGTTTTCGCCACCTATACCGTTACCAAAAACAT
GATTGCCGCAACGGCGGTCGCATTGGTTGCCGGTGTGGTTCAGGCGGCTTTTCTGTATTG
GAAATATAAAAAGCTGGATACGATGCAGTGGGTCGGATTGGTGCTGATTGTGGTATTCGG
CGGCGCAACCATTGTTTTGGGCGACAGCCGCTTCATTATGTGGAAGCCGAGCGTTTTGTT
TTGGCTGGGCGCGCTGTTCCTGTGGGGCAGCCACCTCGCCGGTAAAAACGGCTTGAAGGC
GAGTATCGGCAGGGAGATTCAGCTTCCGGATGCCGTATGGGCGAAATTGACGTATATGTG
GGTCGGTTTCCTGATTTTTATGGGTATCGCCAACTGGTTTGTGTTTACCCGGTTCGAGTC
GCAATGGGTCAACTATAAAATGTTCGGCTCGACTGCACTGATGCTTGTTTTCTTTATTAT
TCAGGGTATTTATCTGAGTACCTGTCTGAAAAAGGAGGATTGACTGTGGAATATTTTATG
TTGCTGGCAACAGACGGGGAGGATGTGCACGAGGCGCGTATGGCGGCACGTCCCGAACAC
CTCAAACGGCTGGAGACGCTGAAGTCGGAAGGCCGGCTGTTGACGGCAGGCCCGAATCCT
TTGCCGGAGGACTCCAACCGCGTTTCGGGCAGTTTGATTGTGGCGCAGTTCGAGTCTTTG
GATGCGGCGCAGGCTTGGGCGGAAGACGATCCCTATGTTCATGCAGGCGTGTACAGCGAA
GTGCTGATCAAGCCGTTTAAAGCGGTGTTCAAATAATGCCGGCCGTCGATTTGATCCGCG
AACGCCTGCAGACGCTCGATCCGCTGGTGTTGGAAATCGGCGATGAGAGCCATCTGCACA
AAGGACACGCGGGCAATACCGGCGGCGGACATTATGCCGTTTTGGTCGTTAGCGGCCGTT
TTGAAGGCGTAAGCCGCCTGAACCGCCAGAAAACGGTCAAATCGCTGCTCAAAGATTTGT
TTTCAGGCGGCATGATTCACGCGCTCGGCATCCGGGCGGCTACCCCTGACGAGTATTTCC
ATACGGCGGACTGAATGAAGTCTGCCCGAACATTTCAATTTAAAATTTAAAGAGAGAAGA
TTATGAAAGCAAAAATCCTGACTTCCGTTGCACTGCTTGCCTGTTCCGGCAGCCTGTTTG
CCCAAACGCTGGCAACCGTCAACGGTCAGAAAATCGACAGTTCCGTCATCGATGCGCAGG
TTGCCGCATTCCGTGCGGAAAACAGCCGTGCCGAAGACACGCCGCAACTGCGCCAATCCC
TGCTGGAAAACGAAGTGGTCAATACCGTGGTCGCACAGGAAGTGAAACGCCTGAAACTCG
ACCGGTCGGCAGAGTTTAAAAATGCGCTTGCCAAATTGCGTGCCGAAGCGAAAAAGTCGG
GCGACGACAAGAAACCGTCCTTCAAAACCGTTTGGCAGGCGGTAAAATATGGCTTGAACG
GCGAGGCATACGCATTGCATATCGCCAAAACCCAACCGGTTTCCGAGCAGGAAGTAAAAG
CCGCATATGACAATATCAGCGGTTTTTACAAAGGTACGCAGGAAGTCCAGTTGGGCGAAA
TCCTGACCGACAAGGAAGAAAATGCAAAAAAAGCGGTTGCCGACTTGAAGGCGAAAAAAG
GTTTCGATGCCGTCTTGAAACAATATTCCCTCAACGACCGTACCAAACAGACCGGTGCGC
CGGTCGGATATGTGCCGCTGAAAGATTTGGAACAGGGTGTTCCGCCGCTTTATCAGGCAA
TTAAGGACTTGAAAAAAGGCGAATTTACGGCAACGCCGCTGAAAAACGGCGATTTCTACG
GCGTTTATTATGTCAACGACAGCCGCGAGGTAAAAGTGCCTTCTTTTGATGAAATGAAAG
GACAGATTGCGGGCAACCTTCAGGCGGAACGGATTGACCGTGCCGTCGGTGCACTGTTGG
GCAAGGCAAACATCAAACCTGCAAAATAATTCTGAAAACGGGATATGGCGGCAAGACGTT
CAGACAGGCGTTTTGCCGCCGCGCAGGACAGGGAATACCATGAAACAGAAAAAAACCGCT
GCCGCAGTTATTGCTGCAATGTTGGCAGGTTTTGCGGCAGCCAAAGCACCCGAAATCGAC
CCGGCTTTGGTGGATACGCTGGTGGCGCAGATCATGCAGCAGGCAGACCGGCATGCGGAG
CAGTCCCAAAAACCGGACGGGCAGGCAATCCGAAACGATGCCGTCCGCCGGCTACAAACT

TTGGAAGTTTTGAAAAACAGGGCATTGAAGGAAGGTTTGGATAAGGATAAGGATGTCCAA
AACCGCTTTAAAATCGCCGAAGCGTCTTTTTATGCCGAGGAGTACGTCCGTTTTCTGGAA
CGTTCGGAAACGGTTTCCGAAGACGAGCTGCACAAGTTTTACGAACAGCAAATCCGCATG
ATCAAATTGCAGCAGGTCAGCTTCGCAACCGAAGAGGAGGCGCGTCAGGCGCAGCAGCTC
CTGCTCAAAGGGCTGTCTTTTGAAGGGCTGATGAAGCGTTATCCGAACGACGAGCAGGCT
TTTGACGGTTTCATTATGGCGCAGCAGCTTCCCGAGCCGCTGGCTTCGCAGTTTGCCGCG
ATGAATCGGGGCGACGTTACCCGCGATCCGGTCAAATTGGGCGAACGCTATTATCTGTTC
AAACTCAGCGAGGTCGGGAAAAACCCCGACGCGCAGCCTTTCGAGTTGGTCAGAAACCAG
TTGGAGCAGGGTTTGAGACAGGAAAAAGCCCGCTTGAAAATCGATGCCCTTTTGGAAGAA
AACGGTGTCAAACCGTAATGGCATTTCCAATACCGATGCCGTCTGAAGCCTTTCAGACGG
CATTGCACGTTCAGGTAAGGAGGACGGCTTATGCGTGCGGTCATACAGAAAACGGTAGGT
GCAAAGGTGGATGTCGTGTCCGAAGCCGGCACGGAAACCTGTGGCAAAATCGACGGCGGG
TTTGTCGTGTTACTCGGCGTAACGCATAGCGACACAGAAAAAGATGCACGCTATATCGCC
GACAAAATCGCCCATTTGCGCGTGTTTGAAGACGAAGCGGGCAAGCTGAACCTGTCTTTG
AAAGATGTCGGCGGCGCGGTGCTGCTGGTGTCGCAGTTTACGCTTTATGCCGACGCGGCA
AGCGGGCGGCGGCCTTCGTTTTCCCAAGCCGCACCTGCAGAACAGGCGCAGCAGCTTTAC
CTGCGAACGGCGGAACTGTTGCGCGGACACGGGATTCATGTCGAAACAGGGCGTTTCCGC
ACGCATATGCAGGTGTCGCTCTGCAACGATGGGCCGGTAACCATACTGCTGGACTCTTTC
ATGACGCGGATTTCCCCAAAAATGAAGGTTGTTCCGGATTGAAATTGAATCCGCAATGAT
AAAATATCGACAATGAACGACAATACACACACCCTTCCCCCGCGCCACCTGTCCGTCGCC
CCCATGCTCGACTGGACGGACAGGCACTACCGTTACCTTGCCCGCCAGATTACCCGAAAT
ACTTGGCTGTACAGCGAAATGGTCAATGCCGGTGCGATTGTTTACGGCGACAAAGACCGC
TTTTTGATGTTCAACGAAGGCGAGCAGCCCGTCGCCCTGCAACTGGGCGGCAGCGATCCG
TCCGATTTGGCGAAAGCCGCCAAAGCCGCCGAGGCATACGGTTACAACGAGGTCAACCTC
AACTGCGGCTGCCCCAGTCCGCGCGTGCAGAAAGGCTCGTTCGGCGCGTGTCTGATGAAC
GAAGTCGGGCTGGTTGCCGACTGCCTCAACGCCATGCAGGATGCGGTCAAGATTCCCGTT
ACCGTCAAACACCGCATCGGTGTGGACAGGCAGACCGAATACCAAACCGTTGCCGATTTC
GTCGGCACGCTGCGCGACAAAACCGCCTGCAAAACCTTTATCGTCCACGCCCGCAACGCT
TGGCTGGACGGTCTTTCCCCCAAAGAAAACCGCGACGTTCCCCCGTTGAAATACGATTAC
GTTTACCGCCTCAAGCAGGAGTTTCCCGGGCTGGAAATCATCATCAACGGCGGCATCACC
ACCAACGAAGCAATCGCAGGACACCTGCAACACGTTGACGGCGTGATGGTCGGGCGCGAG
GCGTACCACAACCCGATGGTGATGCGCGAATGGGACAGGCTGTTTTACGGCGATACCCGC
AGCCCGATTGAATACGCCGATTTGGTGCAGCGTCTCTACACATACAGCCAAGCCCAAATC
CAAGCCGGACGCGGCACAATCTTGCGTCACATCGTCCGCCACAGCCTTGGGCTGATGCAC
GGTCTGAAAGGCGCGCGGACTTGGCGGCGTATGCTTTCCGACGCAACGCTCTTGAAAGAC
AACGACGGCAGCCTGATTCTCGAAGCGTGGAAAGAGGTCGAACGGGCAAATATGCGCGAA
TAGGGCGGGGCTGTATGTGTGAAATGCCGTCTGAAGGCTTCAGACGGCATTTGTGCGTTT
GTCGGGCGGTGTTTAGGGGGCGGTAACGGCGTGTTTCGGCACTTTGTCCATATCCCAGTG
TGCCACCGCCCAGTCGAGCAGTTCGGCAGGGCGGTCGGTTTCCGGTGCTTCGGGCAGCTT
GAGGTAACGGAACACTTGGCGGAGGAGTTGTTCGCGGCGGTTTAAATCCAATGCGGGGGC
GAGCGTCTGTTTCGACCATTTCTGCCCTTGTGCGTTGGTCAGCAGCGGCAGGTGGGCATA
TTGCGGTGTCGGAACGTCCAAACACTGCTGCAAATAGATTTGGCGCGGCGTGGAAACGAG
CAGGTCTTGTCCGCGGACGATGTGGGTAACGCCCTGTTCGGCATCGTCGGCAACGACGGC
GAGCTGGTATGCCCAGTAACCGTCTGCACGAAGCAGGACGAAATCGCCGATGTCGCGGGC
GAGGTTTTGGGCGTAACCGCCGACGATGCCGTCTGAAAAACCGATAATGCGGTCGGGGAC
GCGGATGCGCCACGCCGGCTGTTTGCCTTGCAGTGCAGGGCGTTGGCCGGGGTGGCGGCA
ACGTCCGTTATAGACGAACCCGTCTGCGCCCCGCCTTGCCCCGGCCTGCCAGTCTTTGCG
GCTGCAATGGCAGGGATAGACCAGTCCGGCGGTTTTCAGGCGGCATAGGGTTTCTTCATA
CAGGGCGTAACGGCGGCTCTGATAGGCGACTTCTCCGTCCCACTCGAATCCGAATGCCTC
AAGCGTGTGCAGGATATGGCTTGCCGCCCCCGGCATTTCGCGCGGCGGATCGAGGTCTTC
CATGCGGATCAGCCATTTGCCGCCGTGCGCGCGCGCATCGGCATAGGAAGCGACGGCGGT
CAGCAGCGAGCCGATGTGGAGCAGCCCGGTCGGGCTGGGGGCAAAACGTCCTGTGTACAT
ATCTGGTACAGCCCCTTTATTTAAGACTATTAATCAAAGCCATTATCTCATCTTTATTCA
GTTCCATCCCGGGCTCTTCAAGCAAGGTTAAATCATATAGGGCATTATATTGCTCTTCGG
TAGCTGAACCATCCATAAGAGCAGGCGAGAAAAAATCAAAGGCTCTATCTGCAATTCTCT
CATTACTTGCATTTCTACTAACCAGTTTCGTCAATTCTGTATATTTTGAAAAGTTTATGG
AAAAATAAAACAGCGAAAAAGTTTTGGTTTCGCTGTTTTTGATTTAATTAGCACTGATAA
TCTTCAAATTCCCACGAAAAAAAACGAAGTAAATAAGTCAATGACTTTTCCCAAGTTTCT
TTTGAACATTCTTTAAGAATTTTCTCAATTTCCGATTTAATAACAGAATGATTAAATTCA
TTCATAATCATCATACCCGCCCCCCATTTAACCCTTTGATTTTGGAAACAATTATGCAAA
ATCCATTTAGGAGAGCATATGCGAACAGAAAATATATCTGCAGCATCACTATCATCAGTT
CCTATGTCTAAATCAATTCCCACACAAAAATTGTCTTTGATTTCGGGAACGAAATCTTCA
AAGGCACAATCGTAAAGATTGATGGCTTTCAATTCTAGGTTAATCATTTTATATTCAATA
GTATGGGGAGGTACCGGATCCTTAAAAATCAGATCTGAATAAATTTCATTGGGTGAAATG
ATTTCGATTGCTTTTGCCATGATTCTATTTCCTTTTGTGTTAGTGGGTAATGTCGTGCAT
TAACTTCTTGCCCATTAATATTTTTAGGGTGAATCCTTGATATGCCGCACTGTGTCCGGT
CAAACGGGCGATGCCGTCTGAAAGCCTTTCAGACGGCATCGGGAAAATGCCTAAGCCAAA
GGCGCGAGCAGTTTTTCAAACGCTTCTTCAAACTGTTTCAAACCGTCTTCCTGCAAACGC
GTTGCCAAGGTTTCGACATCGATGCCGAGCGCGGCGGTTTCGGCGAGCTGCGCTTGTGCT
TCTTCTACGCCTTCGGTCAGCGTGGCTTTGGCTGTGCCGTGGTCGATAAAGGCTTTGAGC
GTGGCATCGGGAACGGTGTTGACGGTGTGCGCGCCGATCAGGCTGTCAACGTAGAGCGTG
TCGGGATAGGCCGGGTTTTTCACGCCGGTAGATGCCCATAAAAGCTGCACGCGGTTTGCG
CCTTTGGTTTCCAGCGCGGCAAATTCGGGGCTGCCGAAGTATTGCGCCCAGTCTTGGTAG
GCGGCTTTGGCAAGGGCGATGGCGATTTTGCCTTTGAGGTGGTCGGGCAGTGTTGTGTCC
AGCGCGCCGTCCACACGGGAGATGAAGAAGCTGGCGACAACTTGGATATGGGCAACGCTT

TGTCCGGCTGCTAAGCGTTTGGCGATGCCGCGCGCGTAGGCGGCGTAGGCTTTGAGGGTT
TGGGCGCGTGAGAACAGCAGGGTCAGGTTCACGCTGATGCCGTCTGAAACGAGGGTTTCG
AGCGCATCGATGCCTGCGTCGGTGGCAGGCACTTTAATCATCGCGTTTTTGCACCCGATG
GCGGCGTAGAGGCGGCGCGCTTCTTCAACCGTGCCTTGCGCGTCTTTGGACAATTCGGGC
GAAACTTCGAGGCTGACGAAGCCGGTTTTGCCGCCGGTGGATTCGTGTTCGGCAAGGCAA
ACGTCGCAGGCGGCACGCACATCGGCAACCGCCATTGTTTCGTAGCGTTGTTTGGGGCTG
AGGTTTTGCTGCTTGAGGGCGGCGATTTCATCGGCGTAAAGCGCGTCGCCGGCGAAGGCT
TTTTGGAAGATGGCGGGATTGGAAGTTACGCCGCACACGCCCTGTTTCAACATTTGCGCC
AATTCGCCGCTTTGCACTAGCGAGCGGGAAAGGTTGTCCAGCCAGATTTGTTGTCCTAAT
GCTTTAACGTCCGATAAAATGGTCATCTCTGATTCCTTTGGATGGATAGGCGGGGTTTGA
GGGCTTATGCTACCCCGATTCGGAAATTTTGGGTAGTTTTATTACAGCAAAGGCGGATGG
CAATGGCAGAAAACGGAAAATATCTCGACTGGGCACGCGAAGTGTTGCACGCCGAAGCGG
AAGGCTTGCGCGAAATTGCAGCGGAATTGGACAAAAACTTCGTCCTTGCGGCAGACGCGT
TGTTGCACTGCAAGGGCAGGGTCGTTATCACGGGCATGGGCAAGTCGGGACATATCGGGC
GCAAAATGGCGGCAACTATGGCCTCGACCGGCACGCCTGCGTTTTTCGTCCACCCTGCGG
AAGCGGCACACGGCGATTTGGGTATGATTGTGGACAACGACGTGGTCGTCGCGATTTCCA
ATTCCGGCGAAAGCGACGAAATCGCCGCCATCATCCCCGCACTCAAACGCAAAGACATCA
CGCTTGTCTGCATCACCGCCCGCCCCGATTCAACCATGGCGCGCCATGCCGACATCCACA
TCACGGCGTCGGTTTCCAAAGAAGCCTGCCCGCTGGGGCTTGCCCCGACCACCAGCACCA
CCGCCGTCATGGCTTTGGGCGATGCGTTGGCGGTCGTCCTGCTGCGCGCACGCGCGTTCA
CGCCCGACGATTTCGCCTTGAGCCATCCTGCCGGCAGCCTCGGCAAACGCCTACTTTTGC
GCGTTGCCGACATTATGCACAAAGGCGGCGGCCTGCCTGCCGTCCGACTCGGCACGCCCT
TGAAAGAAGCCATCGTCAGCATGAGTGAAAAAGGGCTGGGCATGTTGGCGGTAACGGACG
GGCAAGGCCGTCTGAAAGGCGTATTCACCGACGGCGATTTGCGCCGCCTGTTTCAAGAAT
GCGACAATTTTACCGGTCTTTCGATAGACGAAGTCATGCATACGCATCCTAAAACCATCT
CCGCCGAACGTCTCGCCACCGAAGCCCTGAAAGTCATGCAGGCAAACCATGTGAACGGGC
TTCTGGTTACCGATGCAGATGGCGTGCTGATCGGCGCGCTGAATATGCACGACCTGCTGG
CGGCACGGATTGTATAGTGGATTAACAAAAACCAGTACGGCGTTGCCTCGCCTTAGCTCA
AAGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATCTGTAC
TGTCTGCGGCTTCGTCGCCTTGTCCTGATTTTTGTTAATCCACTATATAAGGCGTTGCAG
CCGTTTCAGACGGCATTTGTGGTAAGATATGCCGTCTGAAAACAAGGAAATCCCATGCAG
GCAATTTCTCCCGAATTACAGGCGCGCGCCGCCAAAATCAAACTGTTGATCCTGGATGTG
GACGGCGTTTTGACCGACGGGCGCATCTTTATCCGCGATAACGGCGAAGAAATCAAATCG
TTTCACACACTGGACGGACACGGTCTGAAAATGCTTCAGGCAAGCGGCGTGCAGACTGCG
ATTATCACGGGCCGGGACGCGCCCTCCGTCGGCATCCGCGTCAAACAGTTGGGCATAAAT
TACTATTTCAAAGGTATCAGCGACAAACGTGCCGCCTATGAAGAATTGCGCGCGCAGGCG
GGCGTGGAAGAAGCCGAGTGCGCCTTTGTCGGCGACGACGTGGTCGATTTGCCGGTAATG
GTGCGCTGCGGATTGCCGGTTGCCGTCCCCGGCGCGCATTGGTTTACGCGGCAACACGCC
GCCTATATCACGGAACACGCGGGCGGCGCAGGCGCGGTGCGCGAAGTGTGCGACCTGATT
ATGCAGGCGCAAGGGACTTTGGGCGCGGCTTTGAACGAGTACATCAAATGAAAGTAAGAT
GGCGGTACGGAATTGCGTTCCCATTGATATTGGCGGTTGCCTTGGGCAGCCTGTCGGCAT
GGTTGGGTCGTATCAGCGAAGTCGAGATTGAAGAAGTCAGGCTCAATCCCGACGAACCGC
AATACACAATGGACGGCTTGGACGGCAGGCGGTTTGACGAACAGGGATACTTGAAAGAAC
ATTTGAGCGCGAAGGGCGCGAAACAGTTTCCGGAAAGCAGCGACATCCATTTTGATTCGC
CGCATCTCGTGTTCTTCCAAGAAGGCAGGTTGTTGTACGAAGTCGGCAGCGACGAAGCCG
TTTACCATACCGAAAACAAACAGGTTCTTTTTAAAAACAACGTTGTGCTGACCAAAACCG
CCGACGGCAAACGGCAGGCGGGTAAAGTTGAAGCCGAAAAGCTGCACGTCGATACCGAAT
CTCAATATGCCCAAACCGATACGCCTGTCAGTTTCCAATATGGTGCATCGCACGGTCAGG
CGGGCGGCATGACTTACGACCACAAAACAGGCATGTTGAACTTCTCATCTAAAGTGAAAG
CCACGATTTATGATACAAAAGATATGTAAGCTATTTGTTTTAATAGCATTTTTTTCGGCG
TCCCCCGCTTTTGCCCTTCAAAGCGACAGCAGGCAGCCTATTCAGATTGAGGCCGACCAA
GGTTCGCTCGATCAAGCCAACCAAAGCACCACATTCAGCGGAAACGTCGTCATCAGACAG
GGTACGCTCAATATTTCCGCCGCCCGCGTCAATGTTACACGCGGCGGCAAAGGCGGCGAA
TCCGTGAGGGCGGAAGGTTCGCCAGTCCGCTTCAGCCAGACATTGGACGGCGGCAAAGGC
ACGGTGCGCGGACAGGCAAACAACGTTGCTTATTCATCTGCAGGCAGCACCGTAGTCTTA
ACCGGTAATGCCAAAGTACAGCGCGGCGGCGATGTCGCCGAAGGTGCGGTGATTACATAC
AACACCAAAACCGAAGTCTATACCATCAGCGGCAGCACAAAATCCGGCGCAAAATCCGCT
TCCAAATCCGGCAGGGTCAGCGTCGTTATCCAGCCTTCGAGTACGCAAAAATCCGAATAA
TCCCAAAATGCCGTCTGAAATATAAACCCGGTTCGGACGGCATATGCCGACCGAAGATAT
TGAAGAGATATTTATGAGTGCAAACGTCAGCCGCCTTGTTGTTCAAAACCTGCAAAAAAG
TTTCAAAAAACGCCAAGTCGTTAAAAGCTTCTCCCTCGAAATCGAAAGCGGCGAAGTCAT
CGGACTGCTCGGGCCCAACGGTGCGGGTAAAACCACCAGCTTCTACATGATTGTCGGACT
CATCGCCGCCGACGCAGGCAGCGTAACCCTAGACGGACAAGAATTGCGCCACCTGCCCAT
ACACGAACGCGCCCGCCTCGGTGTCGGCTACCTGCCGCAGGAAGCCTCGATATTCCGCAA
AATGACCGTCGAACAAAACATCCGCGCCATCTTGGAAATCAGAACCAAAGATAAAAATCA
AATCGACAGGGAAATCGAAAAACTGCTCGCCGACCTCAATATCGGACACTTACGCCGCAG
CCCCGCGCCGTCGCTGTCCGGCGGCGAACGGCGGCGCGTCGAAATCGCCCGCGTACTCGC
CATGAAACCGCATTTTATTTTGTTGGACGAACCTTTTGCCGGCGTCGATCCGATTGCCGT
CATCGACATCCAGAAAATCATCGGTTTCCTCAAATCGCGCGGTATCGGCGTACTGATTAC
CGACCACAACGTACGCGAAACCCTCAGCATCTGCGATCGGGCCTACATTATTTCAGACGG
CACGGTGTTGGCATCGGGAAAACCTGATGATTTGGTCGGAAACGAACAGGTTCGTTCTGT
TTATCTGGGTAAGAACTTCAAATATTGAAAATATTTTTCAGACGGGCGACCTAATATCGT
CGGGCAGGCGGCAAAAATACGGATTTATGTTGTTTTTACATAAATTAATTCAAATTTAAA
ACATTGACTTAAACCTGTTTTCAAAGAATATTGCCCGATATGCTTGCATGTCGTCCCGTA
ATTTGGTTTAATACGCATCTCTTAACGAGACAGACAAAGGCCAGATAGCTCAGTTGGTAG

AGCAACGGATTGAAAATCCGTGTGTCGGCGGTTCGATTCCGCCTCTGGCCACCAAAAAAC
CGCCTTGAAGCGGTTATTTTTTTGCCTGCCGTTTTTGGGAAGTTGTCCGTGTCGGACAC
GTTTTGTGTCTGACCGTTATGTAGAAGGGCAAAAATGATAATGAGCGCCCCGTTGCGTTT
TGGAGAAGAGGGTAAAGGCAGAAAGCATATGCCGTCTGAATGATATTTCAGACGGCATTT
TATATTGCGGCGGCACTCAGTCCGTGTCGCTTTCAGGCAACTCTGCCGAACCCATGCGTT
TGAGCACGATATTGGTTTTGTTGCGGAGCCGTTTGCTTTTCGGATGGTCGGCGTAGTAGA
GCGGGGCGGGGACGCGCGCCGTCAGTTTTGCCGCCTGCTGTTTGGTCAGCTTGGCGGCGG
GTATTTGATAAAAATACCGGGACGCGGCTTCCGCGCCGAAAACGCCGTAGTGCCATTCGA
TTGAGTTTAAATACAGTTCAAAAATCCTGTCTTTGTCGGTAACGGCTTCCATCATCGCGG
TAATCGCCGCTTCTTCGCCTTTGCGGATATAGCTGCGGCTTTCGTTTAAAAACAGGTTTT
TGGCAAGCTGCTGGGTGATGGTCGAGCCGCGCGCCTTCACTTTGCCGCTGTTCCGGTTGC
GCCTGATGGCGTTTTGAATGCCGCCCCAATCGAAGCCGCCGTGCCCGGCGAAACGGGCAT
CTTCGGAAGCAATCAGGGCTTTTTTCAGGTTGGTGGAAATGCGTTTGTAGGGCATCCAGC
GGTAATCCAGTGCGACATCGCGACCTTCCTGTTCAAACTGCTTCATCCGCATCGACATAA
AGGCAGTCCGATGGGGCGCGACGGCGCGGTAGGTAATGATGTTGCCGTACACATAGGCAT
TGAAAAAGATAAAGATGCCGACGGGCAGGGCAATCAGCCATTTGATGATGCGGAACATGT
TTATAGGGCTTTCATGTATTCGATAACGGGGCGGATATCGGGCGTAAATCCGCGCCAGAG
GGCGTAGGAAGCCGCCGCTTGACCGACTAGCATACCCAGTCCGTCGGCAGTTTTTTTCGC
ACCCGATTGTCGTGCAAAATCTAAAAACGGTTTTGCCGCGCAGCCGTACACCATATCGTA
GGCAAGCGCGCAGTTTTGAAAAATATCGGGCGGAATATCGGGAATCTGACCGTTTAGACC
GCCCGACGTGCCGTTGATGATGATATCAAAACCGCCGTTCACGTCCGCCATCGGGACGGC
TTCAATGCCGAAAAGCTGCGCCAATTCCTCGGCTTTGGCGCGGGTACGGTTGGCAATGAC
GATACGGGCAGGACGGTGTTCTTTCAAAACAGGAATCACGCCGCGCACCGCGCCGCCTGC
GCCCAAAAGCAAAATGGTTTTGCCCTCGATGGCAATATTTTTGACCTGCGTGATGTCGTT
GGTCAAACCGATACCGTCGGTGTTGTCGCCACGCAGCTTGCCGTTTTTCAACGGAATCAG
CGTATTGACCGCACCTGCCGCCAATGCGCGTTCGGAATGCTCGTCCGCCAGATGAAACGC
TTCCTGTTTGAACGGTACGGTAACGTTTGCCCCGCAACCGCCTGTTTGAAAAAATGTCGA
AACCGCCTGCGCGAAACCGCCGATGTCGGCGCAAATGCGTTCGTATTCAATGTCAACGCC
TTCCTGAAGGGCAAATTGTTGATGAATTTGCGGCGATTTGCTGTGGGCGACGGGGTTGCC
GAAAACGGCGTAGCGGGGGAGGGCGGTCATGGTCGTGTTCCAAAAGACGGGAAGGCTATT
TTATAACGGCGGCGTACAGATGGAAACGATGCCGTCTGAAACCGCCTTCAGACGGCATCG
TTTCCTGTATCGGTCGGGAAAAATCCGGATGCGGTGCGCCGGCTTGTCCGCATTGTTGAC
AATCTTGCCGTCTGAAACTATATTTTCCGGGTTGAAATTTGACGCAAAACCGGTTTCAGA
CGGCATCGGCGTGGTAAAATCGTGCCGACTTTGCGTCAAGCCGCCGCGTTCCGCATATTT
TGCTATTTCCCTTTTCCAGGAGCTGAAAAATGTCTATTAAAAACGCCGTAAAATTGATTG
AAGAAAGCGAAGCCCGCTTTGTCGATTTGCGCTTTACCGATACCAAAGGCAAGCAGCACC
ACTTTACCGTGCCTGCGCGCATCGTGTTGGAAGACCCCGAAGAGTGGTTCGAAAACGGTC
AGGCGTTTGACGGTTCGTCTATCGGCGGCTGGAAAGGCATTCAGGCTTCCGATATGCAGT
TGCGCCCCGATGCGTCTACAGCCTTCGTCGATCCTTTTTATGATGATGCGACTGTTGTGT
TGACTTGCGACGTTATCGATCCCGCCGACGGTCAGGGTTACGACCGCGACCCGCGCTCCA
TCGCCCGCCGAGCCGAAGCCTATTTGAAATCTTCCGGCATCGGCGAGACCGCCTATTTCG
GTCCCGAACCCGAGTTTTTCGTATTCGACGGCATAGAATTTGAAACCGATATGCACAAAA
CCCGTTACGAAATCACGTCCGAAAGCGGCGCGTGGGCAAGCGGTCTGCATATGGACGGTC
AAAACACCGGCCACCGCCCGACCGTCAAAGGCGGTTACGCACCTGTTGCACCGATTGACT
GCGGTCAGGATTTGCGTTCGGCGATGGTAAACATTTTGGAAGAACTCGGTATTGAAGTGG
AAGTGCACCACAGCGAAGTCGGCACCGGCAGCCAAATGGAAATCGGCACGCGCTTTGCTA
CTTTGGTCAAACGCGCCGACCAAACCCAAGACATGAAATATGTGATTCAAAACGTTGCCC
ACAACTTCGGCAAAACCGCCACTTTCATGCCCAAACCCATTATGGGCGACAACGGCAGCG
GTATGCACGTTCACCAATCCATTTGGAAAGACGGTCAAAACCTGTTCGCAGGCGACGGCT
ATGCCGGCTTGAGCGACACCGCGCTCTACTACATCGGCGGCATCATCAAACACGCCAAAG
CCTTGAACGCGATTACCAATCCGTCCACCAACTCCTACAAACGCCTCGTGCCGCACTTTG
AAGCGCCGACCAAACTGGCATACTCCGCCAAAAACCGTTCCGCTTCCATCCGCATTCCGT
CCGTGAACAGCAGCAAGGCGCGCCGCATCGAAGCGCGTTTCCCCGATGCGACCGCCAACC
CGTATTTGGCATTTGCCGCCCTGTTGATGGCGGGTTTGGACGGCATTCAAAACAAAATCC
ATCCGGGCGACCCTGCCGATAAAAACCTGTACGATCTGCCGCCGGAAGAAGATGCATTGG
TGCCGACCGTTTGCGCTTCTTTGGAAGAAGCACTGGCCGCCCTCAAAGCCGACCACGAAT
TCCTCCTGCGCGGCGGCGTGTTCAGCAAAGACTGGATCGACAGCTACATCGCTTTCAAAG
AAGAAGACGTACGCCGCATCCGCATGGCGCCGCACCCGGTGGAATTTGAAATGTATTACA
GCCTGTAAGCACGTCTGGTTTTCAGAAAAGCAATGCCGTCTGAACACAGTTTCAGACGGC
ATTTTGCATTTGAACGGCAAACCGGCGGCGCGGGGCGGCATTTTTCAGCAGGCGGGCGAT
ATTTGCTACAATAGGCTTTTGTTTTTTTTGGGCTGCACGAACGATGACTGCATCGAAATC
AGGTTTTATCGGGCAAATCTTTTCCCGCAATATGCTTGTCTGTATTTTTACGGGGTTTAC
CTCGGGGCTGCCGCTGTACTTTCTGATTAACCTGATTCCGGCGTGGTTGCGCAGCGAGCA
GGTGGATTTGAAGAGCATCGGGCTGATGGCGTTAATCGGTCTGCCGTTTACTTGGAAATT
TTTGTGGTCGCCGCTGATGGACGCGGTCAGGCTGCCCGTTTTGGGACGGCGGCGCGGGTG
GATGCTGCTGACGCAGGCAGGGTTGCTGGCGGCTTTGGCGGTCTATGCCTTTTTAAACCC
CCGTAATCATCTGCCGCTGATTGCCGGCTTGTCGGTGCTTGTCGCTTTTTTTTCCGCCAG
TCAGGATATTGTATTGGATGCGTTCAGGCGCGAGATTTTGTCAGACGAAGAATTGGGTTT
GGGCAACTCGGTTCATGTGAACGCCTACCGGATTGCCGCCCTGATTCCCGGTTCATTGAG
TTTGGTGTTGGCAGACAGGATGCCGTGGTTAGAAGTATTTGTTATCACTTCATTATTTAT
GCTGCCCGGCCTTGTGATGACGCTGTTTGTTGCGCGCGAACCCGTGTTGCCTCCTGCCGT
TCCTAAAACGTTGAAGCAGACCGTGGTAGAGCCGTTTAAAGAATTTTTTACGCGCAAGGG
CATCGCTTCGGCGGTGTGCGTGCTGCTGTTTATCTTCCTTTACAAACTCGGCGACAGTAT
GGCAACCGCGTTGGCAACGCCGTTTATCTGGATATGGGTTTCAGCAAGACCGACATCGG
TTTGATTGCGAAAAATGCAGGACTGTGGCCGGCAGTGGCGGCAGGTATCTTGGGCGGTGT

GTGGATGCTGAAAATCGGCGTAAACAAAGCCTTGTGGCTATTCGGCGCGGTGCAGGCTGT
AACCGTTTTGGGGTTTGTATGGCTGGCAGGGTTCGGACCTTTCGACACGGTCGGCACAGG
CGAGAGGCTGATGCTGGCGGCAGTTATCGGCGCGGAAGCGGTCGGCGTGGGGTTGGGGAC
GGCGGCGTTCGTATCGTATATGGCGCGTGAAACCAATCCCGCATTTACCGCAACGCAGCT
TGCGCTGTTTACCAGCCTGTCCGCCGTCCCGCGCACGGTCATCAATTCCTTTGCCGGTTA
TCTGATTGAATGGCTCGGTTATGTACCGTTTTTCCAACTGTGTTTCGCACTCGCCCTACC
GGGTATGCTGCTGCTGCTGAAAGTTGCGCCTTGGAACGGGGAGAAAACTCAGGATGCAGG
CAGATGAACGCGTCAAACTGGAGCGTTTACCTGATATTGTGTGAAAACAGCGCGTTCTAT
TGCGGCATCAGCCCGAATCCGCAACAGCGGCTTGCCGCCCACACAACCGGTAAAGGCGCG
AAATATACCCGCGTATTCAAACCGGTGGCGATGCGTATCGTTGCAGGCGGGATGGATAAA
GGAACGGCACTCAGGCAGGAAATCGCCGTCAAAAAACTGACCGCCGCACAAAAACGGCAA
TTGTGGGAGCAGGCAGAAAAAATGCCGTCTGAAACCTGACGGTTCAGGTTCGGACGGCAG
TTGGCAGCAATCAGGGAAAAGCGGGGCAGGCGGTAAGGAAAACCGACGTTTCAACACACA
GGACGGTACATAAAGCGTCGCCCTATGAAAGTGAAGGCATATATCAGTATTTTTTATACG
CCAACAGAAAAGAATACGATGAACTGTTTGTTGGATTTGTATTGATTAATCAGTATATTT
TTTATGCCGGGGTATTTTTCCTTATCGGTATCCCTTCTTTTATGAGGATGCCTGCCGCTC
ATATAAAGAACGGAAAATACGATGGGAAAATACGGTACAGCCCTCGACATCGCACAATA
TGTCAACTTATAGTGGATTAACAAAAATCAGGACAAGGCGACGAAGCCGCAGACAGTACA
GATAGTACGGCAAGGCGAGACAACGCCGTACTGGTTTTTGTTAATCCACTATATTTGTTT
GTTTTATATTGTAAGTATACGTATAGGCTTTGTAAAGGTAAATTGTGAAAAAAGCAGTTT
TTTAAACGAATGAAACGGCTTCGGGCTGAAATATATGCTGATGCCCTGTCCTTCCCCGTAT
ATCTTGTGTGTTGTCAAAGTGCAGGCTGCTTTGAAATCGGTATTGCCATCTATGAACCAC
CACTTTGTTTTATTTCAGCGGGCTTGAGATGTGTATAAGAATATTGTTTTGAATAAATTT
AAAAAAATGATAATCGTTATTGAAGATTTTTAAAGGAAAGCGTAGAGTGCCAATTCTATG
AAGCAATACGGTAAGTAACAATGAAAATATCTACTGCTTGGGTATAGAGCATATTTCACA
ACCCGTAACTATTCTTGCGGAAACAGAGAAAAAAGTTTCTCTTCTATCTTGGATAAATAT
ATTTACCCTCAGTTTAGTTAAGTATTGGAATTTATACCTAAGTAGCAAAAGTTAGTAAAT
TATTTTTAACTAAAGAGTTAGTATCTACCATGAATATATTCTTTAACTAATTTCTAAGCT
TGAAATTATGAGACCATATGCTACTACCATTTATCAACTTTTTATTTTGTTTATTGGGAG
TGTTTTTACTATGACCTCATGTGAACCTGTTAATGAACAAACCAGTTTCAACAATCCCGA
GCCAATGACAGGATTTGAACATACGGTTACATTTGATTTTCAGGGCACCAAAATGGTTAT
CCCCTATGGCTATCTTGCACGGTATACGCAAAACAATGCCACAAAATGGCTTTCCGACAC
GCCAGGGCAGGATGCTTACTCCATTAATTTGATAGAGATTAGCGTCTATTACAAAAAAAC
CGACCAAGGCTGGGTGCTCGAACCATACAACCAGCAGAACAAAGCACACTTTATTCAATT
TCTACGCGATGGTTTGGATAGCGTGGACGATATTGTTATCCGAAAAGATGCGTGTAGTTT
AAGCACGACTATGGGAGAAAGATTGCTTACTTACGGGGTTAAAAAAATGCCATCTGCCTA
TCCTGAATATGAAGCTTATGAAGATAAAAGACATATTCCTGAAAATCCATATTTTCATGA
ATTTTACTATATTAAAAAAGGAGAAAATCCGGCGATTATTACTCATCGGAATAATCGAAT
AAACCAAACTGAAGAAGATAGTTATAGCACTAGCGTAGGTTCCTGTATTAACGGTTTCAC
GGTACGGTATTACCCGTTTATTCGGGAAAAGCAGCAGCTCACACAGCAGGAGTTGGTAGG
TTATCACCAACAAGTAGAGCAATTGGTACAGAGTTTTGTAAACAATTCAAGTAAAAAATA
ATTTAAAGGATCTTATTATGAATGAGGGTGAAGTTGTTTTAACACCAGAACAAATCCAAA
CCTTGCGTGGTTATGCTTCCCGTGGCGATACCTATGGCGGTTGGCGTTATTTGGCTAATT
TGGGTGACCGTTATGCGGATGATGCTGCTGCAATTGTCGGTAAGGATGCAAACTTAAATG
GTTTGAATTTATGGATGAAAAAAGGGGTGGAAAACCTATGGGATGATACGGTCGGTAAAA
AGACCCGTTTAATGTGTATTTCCGTTTTTTGGATTGTGGTTTTCAATTTGTAGCGAATCG
GATTCGGCATATACGGCATTGCAAAAAGCGTTTGACTCTCCAATGCCGTCTGAAAACCGG
TTTCAGACGGCATTTGCGTTCAGTGAGAAAGGTCGCGCCTGCCGCCCGAACGTCTCGCCG
CAGCCTCTGCATAACGGCGCACCTCTTTTTCCAAATTTTCCAAGTTCAAAGGAAAATCAG
GCAGTCTGTCTCCCTGTTTCTCTTCGCGGACAATCCGCCCGCCATCCAAATACCACGTCT
GTTGCGCATGATAGGTCTGCATATCCGCCGTTACGCCATCCGCTTTCAATGCTACCGTCG
AAGATTGTGCAATAAAAAGATTTCCGTTTTTCAAATAATATTCGAAACTCTGGCGTTTTT
TTCCATTGTCGAAACTCCAATAGACTTTTTGCGGCAGACCGTCCGCATCATAGCCGACCA
CAAGACTGTTCGCCTTCATCCCTCGGGGCATCAATTCCCGCATATTCTGATAAAACACAG
AATTGCGCGAGTCCGACGCAATTCGGTTGCTCTCTTTGCGGAAGTCCCAAACCTTCTGCT
CGTCATTCGCGACATCCCGGTATTTCGCCAAATATACCTGGGCCATCTGATAACACCCGA
GGCAATGCTCATAAACATCTTCCCCGATTTTCCCGCGCCCCGCCGCATCAAATACCGAAC
CGTCTGGTTGCCAAACAACCCGATATTCTCCTGTCGTTTCATAATTTTCCCCGTGAACCG
TTCCGCCGTACACATTTACAGAAAACGGACGATCGTTCCGATACAGATATTCGGCATTAA
CAAATGCTTCCGGCGAGCGTTGCGAAAGCGAAACCGCAACCAAACCGCCCTCGCCGATAT
GGTAATCCAGCCAAACCTCTTTCCCATGTTCCTGCTCCGTTACGTGAAACCATTTCGCCT
TTTCTTTCAAACGACTGAGCCGGATAGCGAGCGCGAGATAATCCTTCTCCGACTGCAACG
GACCGTCATCCACAGTTCCGGCAAGATTTTCCTCCGTCCTTATCGATTCCTTCACGATGA
CAACCGCCCTGTCGGCATTTCGGAACAGGCGGGCAAGTTTCGCCACAAAAGCATTCGGAT
TTTTAGGTACTTCAGTTGCCGTATCGCTCAAAAACCAACGCGGATTAATCTCATAGGCAA
TACCCGTTCCCAGCCAAAAGGCAAATACAAGTGCAAAAAATGACAACAGTACCGGTTTGA
ATTTTTTAAACATATTTATTTTTCGTTTAACAGAATATATCGATTATATCAGACGAGCTT
TGATTGCCGGGTTTTGCTATTTTTTGTTGTAATAATCAAATTGCACGTTGACTATGTCTT
TCTCGGTAAAAATATAACGGAGCATTGTTTTAAGCCTTTCATAACGTTCATTAATTCCTA
CGCTATCAGGTAGCCAAGGGGAAGCTTTAATTTCAAAAAGTTTCCAATTTGGAACCATTA
AGAAATCAATAATGGTACCGATTCCAATGACAACATATCTTGGTATGTCCATCGGATAAG
GATATTTTTTTCTAACCTCGATTAAATCATTCTCCAACTTCCAATATTCTTCATCATCCC
ACACCCCGTCATCATACCATTTGCCAATAAATGAATTTTCGTCATACCCCTCAAAACAAG
TAATATTTCTTCTGAAGTTTTTTAACTCACACATAATACACATAATAATTAATCTCCAAT
ACGATTTAGGTTTTTATCAAATGTACCGTTTCTTGTTTCTTTTCTGTAATGTTATTCATC

GTAGTAAGGTTCTGTTGAATAATTGTCTTTGCCCCCGGCAATGATAGTAACAATTTTCCC
TTTTGCTTCCCAAGCTTGTACTCCTATTTCATCAAACTCATAGACATATGTCGGATAAGA
TTCATTTGATAAATAATATTTATCAACACCGTATGATTTAGGGTAATGGAAAAGCTGTTT
AAAATCTTCAAAATTCAGACCTATTATATTAACGCCCATAAAATATAGCTCCTGATAACA
AAATATCGAAATAATTTTGTTTTTTTTTTGACGGAAATGAGTAAATTTGAGTCGGGAGA
TTCATAATATTCTGTTCTAAACTCATCAGGAGGTTCATACATAAAAGTTTCCAGTATGTT
TTTGTACTGTGTTATATCCGCACCAAAACGGAATATTCCTACAGAAGTAAAAGGTAAAAA
TTCGGGAGTTTTAACGACCGCGTCGACCATGCTCTTCTCCTTTTGTTTTTCGATTGGCAT
TTTTGGCAATATTTCTGATTTTTTGCTTAATCTTTAAGCGTTCATTTTTGGACATTCCGG
GAATAATTTTATTTGTTAATTCAGCAATTTTTGATTCCGCTGATATTTGACTTCGACCGC
CATCTCCATGTTTTTCATTCTTGGAGCTTCCTGTTCTTTTAGGCGGACAAGAATTATGAA
CCCAAACCCCTTCCGTTTCCGCCTGATTACCCTTGACGAAGTAAGTATGCCAATCGGCAA
CGGTCAGATTGTAGGCTTTGAGCGGTTTTGGTTTGACAACGGTTTTGCGGACGGTTTGGG
TTCTGCCGCTTTCGGATAACAGCCTGCTTCCCGCTTTCAAATCTTCCGCTTTAATCCATT
TGCCGTCCGAATAAAACGGATGGATGCGGTTGGAAATCAGGATTTGGCTGTTGCCGATGC
CGTCTGAAAGCCGGATATCGCTTCAGACGGCATTTTGATTGCCGGGTTTTGCTATTTTTT
GTTGTAATAATCAAATCGCACGTTGACTATGTCTTTCTCGGTAAAAATATAACGGAGCAT
CGTTGTGAATCTTTCATAACGTTCATGAATTCCCACACTATCAGGCAACCAAGGGGAAGC
TTTAATTTCAAAAAGTTTCCAATTTGGAACCATTAAGAAATCAATAATGGTACCGATTCC
AATGACAACATATCTTGGTATGTCCATCGGATAAGGATATTTTTTTCTAACCTCGATTAA
ATCATTCTCCAACTTCCAATATTCTTCATCATCCCACACCCCGTCATCATACCATTTGCC
AATAAATGAATTTTCGTCATACCCCTCAAAATAAGGAACGTTTCTTATAATATCCTTGAA
CTCACACATAATAATGTATCTCCAATATAATTAAACTTTTCGTCTCAATCTACCTTTACT
ATGTTGTATTGGAAAGTAAAAAAATTTCCAGTCCTCTACATCTAGATCAGTAAAAATATA
ACGGAGCATTACCCTGAACCTTTCATAACGCTCATTAATTTTGACACTTTTAGGCAACCA
AGTAGAAGCTTTAATTTCAAAAAGTTTCCAATTTTGAACCATTAAAAAATCAATAATGGT
ACCGATTCCAATCACGATGTCCCTTGGTATATCCATCGGATAAGGATATTTTTTTCTAAC
CTCAATTAAATCATTCTCCAATTTCCAATATTCTTCATCATCCCACACCCCGTCATCATA
CCATTTGCCAATAAATGAATTTTCGTCATACTCCTTAAAACAAGGGATGTTTCTTCTAAA
ATCCTTGAACTCGCACATAATAATTAATCTCCAATACGATTTAGGTTTTTATCAAATGTA
CCGTTTCTTGTTTCTTTTCTGTTCAGTTTTTCGGGTGAAGATGCCTCTTTCCAAGCACCT
CCATTATGTGAATCTACATCGCGTGATATATAACTCTTTCCTTTTTTAAAAATAGCAGCA
TCATTTCTCGTTCTTTCTTTTATTTTTCTATATCCCAATTCCTTTGCTGCTGCATATGCT
TCTGAATCATTCCCATATATGGGGGTAGATGGTGTTTTTCTTGGCGGACAATCATTATGA
ACCCAAACCCCTTCCGTTTCCGCCCGATTGCCCTTGACGAAGTAAGTATGCCAGTCGGCA
ACGGTCAGATTGTAGGCTTTGAGCGGCTGCTGTTTGAGGGTAATGTTTTGAACCGTCTGT
TTTGCACCGCTTTCGGAAAGCAGGGTGTCGCCTTTTTTCAGACGACCTGCCTGTATCCAT
TTTCCTTGACTGTAAAACGGGTGGATTTTATTGGAAATCAGGGTTTGGTTGTTGCCGATG
CCGTCTGAAATTTCAATGTAAACGGTTTCTTGATACGGATTGCCGTATCGGGCGGTAACG
GGTTTGTATCCCGTTTTTCCGCTTGCCTCGTCCTTGGCGAAGACGCGGTCGCCGGTTCGG
ATACGGGCAATGGCTTTGTAGCCGTCTGCCGTTTTGACCAAGGTGCTGCCGTGGAAGGAG
CAGGTGTAGGATTTTTAAAGAACTTAGTTCTCAATATCCTGTTTCATTCATCAAAATGCC
GTCTGAAAGCTGAATACCGCTTCAGACGGCATTTTGGTGGTTGGGTTTTTAAGCCAACCT
ACGCTTACTGAAAACCAAATTGAGTTTCAGACAGTTTTTAGGTTTGGGTGTCCAATCTAA
CTTATATTTGTCCATTTAATTAGTCGTTTGTATCAAATTTCCATTATTTATTTTCCAATT
TACTTTATAATTATCTTCATAATAATCTAATTCAAAAAAACCTGATATTTCAATATCCAA
TTCCATTATTGTTTTAATACATTTTTCAAAATAAATAATGAAATAAGATTTTACGCATGC
ACCAAAAAAAAATATAGCTGCTCCAATTAAAACTATTTGTCGGGAAAACCCACCCGCTTTT
ATATATTTTTGCAGATTCTTTCTCTTCGATATTAAAGGGACAATTATTCCAAAAAATTATT
AATGTTTTCTTGGATGATTTTTATATCATCGTCAGAGCATTCAATCCATCCTTTTATGGA
AACATATGATGCCATGTTTAATCTCCTAAACCTGTTTTAACAATGCCGCCTTTTGATTCA
ATATATGACTTAACTTGTGAATGAACACCGTATTTAAACCAAAATTCTGCACGTTTTCCC
TGTTGGTTTGCTGCTTCGATGGTTGCTTTAATTTGCTTTCTATTTTTTTGATTTAAGAAA
TTTTTAGGTTTATCTATTGCTGAAATTGTTCTTTTGGCTTGTATTAAAGCATCATTCGTA
ACAGCGTCAATTTCTCTGCCGTTAATAAATTTTGATGAACCATCAGTTTTTCTTCTAATT
AAATCTTCATAATGTATATCTAGAGCTTCTCTATACTTTGCATTTTGATATAACTGTCTC
GCACTATCAGACAAAGCCAATTTCTTTTTATAAGAATCAGCAAAATCCCCGCTAACCGCA
GCCTTCCCTGGTTTTGCCGCCTTTGCCAACTTCGCGACTTTGGCTGCTGCGGCAACGTTG
AAGACGGCTTCGACGGTTTCGGCGGCATTGGGATTTTCCTGTATCCACCGGTCAACGGCT
TCGCGCGTATTCTTTTCAAAGCCCGCCACGCTGCCCAAGCCGCCGATGACGGCGAATTTG
CCCTCGGCGGGCAAGGGGGCGATGTTGCGCATTGCGGCTTTGTCTATGGCATAGCGCGTT
CCGTACAGTATGTCGCCTATGCCCAAGGCTTCGCCCGCGCTGATAAAGGGGTTGAGCGCG
CCGGCGGCGACGCCGTTGATAAACTCCATGCTGTTGCCCCAGCGGTCGAGCTTGGCATTG
TGCTCGAACATTTTTCTGTTGGCTTCATCGGCGCGGTCGGAGAAATTGCTGCCGAGGTTG
CTGTAATTGTCGGATATGCGTTGCCGGATGCTGCGGGTGTCGGTCGGATTGAGTTTGATA
CTGCGGGCTGTGCCGTTGACGTGATAGGTGTATTCGTCTCGTGCGCCCGTAGGTTTGGGG
TAATTGCCGCCCTTCGGGCCGTCGTAGGCATCGGCGGGATGATGTTCGTGTCCTTCCCAG
TTGAGCCGGTATACGGTAAAGCCTTCGTCAACGTTGCCTTTTTCTTCGCTCGCGCTGTCG
GCGGCGTGGTTGTCGAAGGGGGCGTGTTCTTCGTGTCCGTGTCCGGAAAAGCGGGTGTGG
TAGCCGATTGTGCCGTTGATGTTTGCCTGTTGGATGAGCAGGTTGCCCATCTGGTGGGTA
TAGTCTTGGATGACGTTGATTTTGCCGGTGCGGTCGGAAACGCTGCCGCGCGGGTCGCCG
AAGAGGTGGTATTTGCCGCCGGGTTCGTAGTGCTGCCGTTGGGCGTTATCGGTAATGAAC
GGGTCTTGCGCCAAGTCCGCCGCGAGGGCGGGCTGTATGAGTGCGGCCGCCGCTACGGCG
CAGGCGGCAAGGAGGTTTGTCAGTCTGCGCAGCGGTTTCACGGTTTATCCTCCTTTGCGG
CGGCGGATGACTTCGTTGCCGACATCGGGTTTTTTACCGTTGTTTTGTTTGAAGTCGGGA

CGGTTTTGGGCGGTTGTGTCGCCGTAGGGGGTAATGTCGGAGAAATCGACCATCAGGCGG
TCTGAGGCTTTGACGGTTTTGCTGACTTTGTAAGGGCCGGTCCAAAGGGCGTATTGTTCT
TGGTATTGGGATTCGTAGGCGGCGGTTTTAGGGGTAATCAGCAGTTTCCGGCTGTCGCGG
TCAACGGCGAAATATTCGAGCTTGGTTTGGGCTTTAAGGGTTTCGGCGTTGTAGAGGTGC
AGTTCGGTACGGCTGCGGACGGTGCCGAATACGTCGACGGTTACGAATACGTCGGTGTCG
GCGTATTCGGGCGGTACGACTTCGATGCCGCGCAGGTAGAAGACGGTTTGGATGAGGTTG
GTCAGGAAGGAAACGTCGCGGGGGTTGGCGAGCAGGGTTTCGTTGCGGTAGTCGCCCGTG
CCGTTGACGGACAGTCCGGCGGAGCGTTCGCCTTTGCGTCCGCTGTTTTTCGTCAGGGCG
GCGGCGGGGGCGTTCAAAAGCGATGTGGAAGTGGTTACGCTGGAGAGCGCGTCGGATTTG
GTGGTGGCGGTAGTGTCGTAGGCGGGGTAGCTGTATTGGGTGGCACTTTCGGGGTTGTTG
TGGTAGCCGCCGCGTATCAGTGCGTCGATAGAGTAGCGTCCGCCGCTTATGTTGCCCGAA
CCTTGGTCGCCCATAACGGAGACGTAAAGGGCGGCTTTGCGTCCTTTTAGGGCGGACAAA
TCCATTTCTTTGACGGCGGCGCGGGACGATGCGGCGACGAGTTCTTGTTCGACGGCAAAG
CGTTTGCCGCCGCCGTGGGCGGGTATGCCGGTCAGTGTGCCGCAGGCTGTGAGGACGAGG
GGGATGAGGAGGAGCAGGGTTTTCATAGCGGGGTTTGTTTGATGTTGAACGGATTTTGAG
TGTAAAGGGATTTTAAGGGTTTGTAAACAAAAGGGGCGAAAATGCCGTCTGAGCGGCGGA
AATGGCTTTCAGACGGCATTTGCGCTCAATAATAATATCCCGCGCCCAGAATACACGGTT
TGGATGCGCCGGTTGCTTTGTGCGGACTACCGGGAATGCGATTAATCCAACACGCCGCCA
ACCACGCAAATGCGGCGGCTTCCACCCATTGCGGATCGAGGTTCAGGTCGGCGGTGCTGT
GCAGGGAAACGCGTGTGCCGAAACATTCTGCCAAATCCGCCATTAAAACAGGATTGCGGA
TGCCGCCGCCGCAAATGTACATTTGACGGGCATCTGCCGCTGCGTGTGAGACGGCGTCGC
AAACGGTTTGCGCGGTAAAACGGGAAAGCGTCCGCAATACGTCGTATCGGTTTTCGCCGC
CGTCAAGGTAGGTTTCGAGCCAATTTAGGGCAAACAGTTCGCGCCCCGTGCTTTTAGGGT
GGGGTTGTGCGAAATACGGGTGGGCGAGCAGCCTGTCGAGCAGTTGCGGCAATATGTTGC
CTTGTGCCGCCTTTGCACCGTTTTTGTCGTAAGGAAGCTGCCAGTGTGCCTGCGTCCACG
CGTCCATCAGCATATTGCCCGGCCCTGTGTCGAAGCCGAAGGCGGGTGCGTCGGGGGGGA
GTACGCTGATGTTGGCAATCCCGCCGATGTTCAGTACCGCGCGTGTTTCCCTGTTGTCGC
GGAACAGGGCTTCGTGAAAGGCGGGGACGAGTGGCGCGCCTTGTCCGCCGGCCGCAAGGT
CGCGGCTGCGGAAGTCGCCGACGGTAAAAATCCGCGTCCGTTCCGCCAGCAGCGGCAAAT
CGGCAAGCTGTATGCTGTAACCGTGTTCCGGCGCGTGTCGGACGGTTTGCCCGTGGCAGC
CGAGGGCGGTAATGTCGGACGGTGCGAGGTTTTGACTGCACAGCAGTTCGGCGGCGGTTT
GCGCATATAGGCGGCTGAGTTCTTGCGACAAAATCCTGCTGCGGTGCAGTTCGTCTGCGC
CTGTGTCCTGCAAATCCAGCAATTGGCGGCGTAACCTGCCGGGGTAGGGGGTAAAGGCGT
GCCCTTCCGCGCCCAGCCATTTGCCGCCGTCCATCCGTATCAGTACGGCATCCGCCCCGT
CCATGCTGGTTCCCGACATGATGCCGATGTAAAGCTGTGTTTCCATCATCACTCCCAAAC
TGGTGCAAAACGCCATTTTAACGTGTATTGACGCTCGTATACCGATTTGCCGCCGCAGTG
TAAATAAAGTGTAAATAAATGTTTCAAGACGGATGGAAAAATATTATAATGCGCCCGCAA
CATCCAGTAGTAGAAGTGTCATACAAACCGTTTCCGGCAGCAGTTTTGCATTCGGTCAGG
TTTGGGGGTATTCGGATGCGGTTAGGAAGGATGCGTCTGCCATATCCCGAAACGGCAGTT
CGACCGGAGGCAGCAGTACAGTGTCGGCAACACTCATGATTTCCACCACATTAAAGGAAG
ATTGCCATGGCTCAAATCCAAATGAGCGCAAATGTTAAAACCATCAACGCCGTCTTTGCC
GCCATGCTGGTAGGTACAGTCGGCTATTTTATTTATTGGGGCTTGGGTTATACCCATTAC
AATTACGCCGCCTTATTCATTATTGCCACGATGTTCGGCGTGTTTATGGCGTTCAACATC
GGCGGCAACGATGTTGCCAATTCTTTCGGCACCAGCGTCGGTGCGGGTACGCTGACCATC
CCGCAGGCTTTGCTGATTGCGGCGGTATTTGAGGTCAGCGGCGCGGTCATCGCGGGCGGC
GAGGTAACCAATACCATACGCAAAGGCATCGTCGATTTGAAGGGTGTTGATTTCGAACCC
ATACAGTTTGTGTTTATTATGATGTCCGCGCTTTTGGCGGCGGCGTTGTGGCTGTTGTTT
GCCTCGAAAAAAGGGCTTCCGGTATCTACCACCCATTCCATTATCGGCGGCATTGTCGGC
AGCGCGGTATGTATGGCGGTAATGAACGATGCCGCATCGGGCGATTTGATACGTTGGGGC
AAGCTGGGCGGTATTGGTGTTTCTTGGGTATTGTCGCCCGTGTTGGGCGGCGCGGTGTCC
TATTTTCTGTTTTCGCGCGTCAAGAAAAACGTCTTAGATTACAACGCTTGGGCGGAAGGC
ACGCTCAAGGGCATCAAGCAGGAAAAAAAGGCCTATAAAGAACGGCACCGCCTGTTTTTC
GAGGGTTTGTCCGAAGCCGAAAAAGTCGAGTACGCCACCAAAATGGCGCACGACGCGCAA
ATTTACGACGAACCCGAATTCGATCCGCAAGAGCTGCAATCGGAGTATTACCGCGGTCTT
TATGCGTTCGACAACCGTAAAAACAATGTCGATTCCTACAAGGCACTGCATTCTTGGATT
CCCTTTATCGCTTCGTTCGGCGCGATGATGATTTCCGCTATGCTGATTTTCAAGGGCTTG
AAAAACCTGCATTTGGGGATGAGCAACGTCAACAGCTTCCTGACCATCTTTATGATAGGC
GCGGCGGTGTGGATGGGGACGTTTGTTTTTGCCAAAAGCCTCAAGCGTAAAGACTTGGGC
AAATCGACCTTTCAGATGTTTTCATGGATGCAGGTCTTTACCGCCTGCGGCTTCGCATTC
AGCCACGGTGCGAACGATATCGCCAACGCCATCGGTCCGTTTGCCGCGATTATGGATGTT
TTGCGTACCAACAGCGTTGCCGCGCAAAATGTCGTCCCCCCGATTGCGATGCTGACTTTC
GGCATCGCGCTGATTGTCGGTTTGTGGTTTGTCGGTAAAGAGGTGATTAAAACCGTCGGT
ACGAGTTTGGCGGAAATGCATCCTGCTTCGGGTTTTACCGCCGAACTGTCCGCCGCCTCC
GTCGTGATGGGCGCGTCGCTGATGGGGCTGCCCGTGTCCAGTACGCATATCTTGGTCGGC
GCGGTACTCGGTATCGGTCTGGTCAACCGCAATGCCAACTGGAAACTGATGAAGCCCATC
GGTTTGGCGTGGGTCATTACCCTGCCTGCCGCCGCCGTATTGTCGGTTGTCTGCTACTTG
GTTTTACAGGCAGTATTCTGATTGTAAAATACTGATGCCGTCTGAACCCGTGTTCAGACG
GCATTTTGTTGATGGAATGTGCGGGCTTGTGCCTTATGCACAATCTGTTCTGTCGGGATA
TGCCGTTTGGTATAGTGATTAACAAAAATCAGGACAAGGCGACGAAGCCGCAGACAGTAC
AGCTAGTACGGCAAGGCGAGGCAACGCTGTACTGGTTTTTGTTAATCCACTATATCTTGG
TTTCGGAACGGTCGGACACAAAGGTGCGGAACGTTATGATATGCCGCCGCCTGTTCTTGA
AAACACTTATCCTGCCGGCAGCAAAATGCCGTCTGAAAAAGCCTTTCAGACGGCATTTGT
ACGTTAGCCACAATCACACTGTTTGCGAATATTTCGCCTTGGTTTCTTTATGGCGCAGGT
GGTAATCGAAGACCATGGCGATGTTGCGGATGAGGAAGCGTCCTTTCGGGGTAACGGTCA
GCCCGTGGCTGTTCAGGCGCACCAATCCCAAACCGGCGAGTTTTTCCAAATCCGCCAGTT

CGTCTTTGAAGTAGCGGTCGAACGGGATGCCGAACATACTTTCGTAAATCCGATAGTCGA
GCGCGAAACGGCACATCAAATCCTGAATGATGTTGCGGCGCAGGATGTCGTCCTGATTGA
GCTGGTAGCCGCGCATGATGGGCAGTCTGCCTTCGTCGATGGCGGCATAGTAGGCATCGA
TGTCGCGTTCGTTTTGGGAATAGGTGCTGCCGATTTTGCCGATGGACGACACGCCGATGG
CGACCAAATCGCAATCCGCGTAGGTCGAATAGCCTTGGAAGTTGCGCTGGAGGAAGCCTT
CTTTGAGGGCGATGGAGAGTTCGTCGTCAGGTTTGGCGAAATGATCCATGCCGATGAAGA
CGTAGCCGCGTTCGGTTAGGGTTTGGACGCAGTATTGCAGCATATCGAGCTTCTCTTCGC
TGTCGGGAACGGCGGCGGTATCGATGCGGCGTTGCGGTTTGAACACGTGCGGCAGGTGGG
CGTAGTGATAAAGGGCGAGGCGGTCGGGATCGAGCGACAAAACGGTATCGATGGTGGTTT
TGATGCTTTCCGAAGTCTGGTGCGGCAGGCCGTAAATCAAATCGACGCTGACGGATTTGA
ACCCCGCTTCGCGCGCCCCATCGATGACTTCTTTGGTTTCTTCGTAACTTTGGATGCGGT
TGACCGCCGCCTGCACTTTGGGGTCGAAATCCTGAATGCCGATGCTCATGCGGTTGAAGC
CGAGTCTGCCGAGCATGAGGACGGTGTCGCGGCTGACTTTGCGCGGGTCGATTTCGATGG
AGTATTCGCCGGTGGGGATTAACTCGAAATGTTTGCGTATCATGCGGAAGACACGTTCGA
TCTGTTCGTCGCTCAAAAAGGTCGGCGTGCCGCCGCCGAAGTGCAGTTGGGCAAGCTGGT
GCCGTCCGTTCAGATGTGGAGCGAGCAGTTCCATTTCTTTTTCAAGATATTCGATGTAGG
CATCGGCGCGGCTTTTGTCTTTGGTGATGATTTTGTTGCAGCCGCAGTAGTAGCAGATGG
TGTTGCAGAACGGAATGTGAATGTAAAGGGAAAGCGGTTTGTTTAACGCGCCCATACCGC
GCAAATGTAAAGCTTTGATATATTCGCCTTCGCGGAAACCGTCATGGAAACGGTCGGCGG
TAGGGTAGGAAGTGTAGCGCGGGCCGCTGGCGGGCAGGCTGGCAATCAGCGCGCGGTCAA
ACTCGGGGCGGTCATCGTTTACATTGTGATTGTTCTGTATCTGAATGATTTTCATGGTGT
GTGTGTGCGGTTTTATGATGTTAGTCAAATTTTGGATAGTTTGGTAGAATGCCACAGTAT
GATAAACCTGTCTTGATATGTGTCAATAAGCACATATAGTGCATTAAATTTAAATAAGGA
CAAGGCGAGGCAACGCCGTACTGGTTTAAATTTAATCCACTATAATCATGATGGGGCAAA
GCGCACAAAAAGGTACGGTATGGCTTCGCATAATACTACACATCAGATGAAAACGCTGTG
TTCTTCCTGTTCTTTGCGGGAACTCTGCCTGCCTGTCGGGCTGCTGCCCAACGAGCTCAG
CCAACTCGATGCCGTCATCCGTCAAAGCCGCCGCCTGAAAAAGGGCGAATACCTGTTCTG
TGTCGGCGAAGCCTTTACCTCGCTCTTTGCCATCCGTTCGGGCTTCTTCAAAACAACCGT
CGCCAGTCAGGACGGCCGCGATCAGGTAACGGGTTTCTTTATGTCGGGCGAACTCATCGG
CATGGACGGCATCTGTTCCCATGTGCACAGTTGCGACGCGGTCGCCTTGGAAGACAGCGA
AGTGTGCGAACTGCCGTTTACCCACATCGAAGAACTGGGGCAAAACATCCCCAGCCTGCG
TACGCACTTCTTCCGCATGATGAGCCGTGAAATCGTGCGCGACCAAGGTGTTATGCTGCT
GTTGGGCAATATGCGCGCCGAAGAGCGGATTGCCGCCTTCCTGCTGAACCTTTCCCAACG
CCTTTATTCCCGAGGTTTTGCTGCCAACGACTTCATCTTAAGAATGTCCCGCGAAGAAAT
CGGCAGTTATCTCGGGCTGAAACTTGAAACCGTCAGCCGCACATTATCTAAATTTCATCA
GGAAGGATTGATTTCCGTCGAGCATAAGCACATCAAAATCCTCAATCTGCAGGTGTTGAA
AAAAATGGTGTCCGGCTGCTCGCACGCCATTTGATTAACCCGTACGAACATTTCAGACAG
CATTCTCAATAAACACAGGGCAGACGAAAACATCTGTCCTGTTTGTTGTATCTGCCGCAA
AGTGCCGTCTGAAAACCGGCAGCCGCCTAAATCGAAAAATCCTCGCTGATGGGCGTGTAC
AGAATCCTATCCACCTTCTCGCGTGTCAGGTGCGGCGCGAACGCTTGGATAAAGTCGTAG
GCATATCCGCGCAAATAAGTATCGCTGCGCAAAGCAATCCACGTCGGCGACGGCTCGAAC
AGGTGTGCCGCATCCACAAGCTGCAAATCGCCGTCCGTATCCGGGTTGTACGCCATTTTC
GCCATCAGTCCCACGCCCAAACCCAAGCGCACATAAGTCTTCAATACGTCCGTATCTGCC
GCAGCCAATGCGACATCGGGTTGTTCCAAACGGGCTTTGGAAAATGCCCGCGCGATGCTG
CTGCCCGCATTGAATGCAAATTCATAAGTAATCAGCGGAAACCTCGCCAAATCTTCAATA
CGGAGGGGGTTTCTGCATTCGAGCAAGGGGTGGTCGTTCGGTACGATAACCGCATGAGTC
CAGTCATAGCAGGGAAGTTTTCCCAGTTCGGGATGGTCGTCTATCCGTTCCGTAACAATC
GCCAAGTCCGCCTCGCCTGAGGTAACCATACGTGCGATGGCGGCAGGGCTCCCCTGTTTG
ATGGTCAGGTTGACTTTCGGATAGCGTTTCACAAAATCGGCAACAATCAAGGGTAGGGCA
TAGCGTGCCTGAGTATGCGTCGTGGCAACCGTCAGCGAACCGCTGTCCTGTCCGGTAAAC
TCGCTGCCGATATTTTTAATGTTCTGAACATCGCGCAAAATACGTTCCGCAATATCCAAA
ACCACCTTGCCCGGCTGCGAGACCGAAACCACGCGCTTGCCGCTGCGGATAAAAATCTGA
ATGCCGATTTCTTCTTCCAGCAATTTGATTTGTTTGGAGATGCCGGGTTGCGAAGTAAAC
AAGGCTTCGGCCGCTTCGGAAACGTTCAGGTTGTGCTGGTAAACTTCTAAGGCGTATTTC
AATTGTTGTAATTTCATGGCGGGTCGGTGTGGGTCTGTGTCGGGTGGCTGAACATTGTTT
ATAATTTATCATATTTTCTTGCCGGTACGGTATGGGGCTTTGCCGTTGTGTTTGTTGTTT
TTGTGCAACGGCAATCGTGCGATATGGAAAAAATCCCCCTAAAGTAATGACACGGAATTG
ATTTTTCGGCATGATAGACTATCAGGAAACAGGCTGTTTTACGGTTGTTTTCAGGCGTTG
AGTATTGACAGTCCGCCCCCTGCTTCTTTATAGTGGAGACTGAAATATCCGATTTGCCGC
CATGTTTCTACAGCGGCCTGTATGTTGGCAATTCAGCAGTTGCTTCTGTATCTGCTGTAC
AAATTTAATGAGGGAATAAAATGACCAAACAGCTGAAATTAAGCGCATTATTCGTTGCAT
TGCTCGCTTCCGGCACTGCTGTTGCGGGCGAGGCGTCCGTTCAGGGTTACACCGTAAGCG
GCCAGTCGAACGAAATCGTACGCAACAACTATGGCGAATGCTGGAAAAACGCCTACTTTG
ATAAAGCAAGCCAAGGTCGCGTAGAATGCGGCGATGCGGTTGCTGCCCCCGAACCCGAGC
CAGAACCCGAACCCGCACCCGCGCCTGTCGTCGTTGTGGAGCAGGCTCCGCAATATGTTG
ATGAAACCATTTCCCTGTCTGCCAAAACCCTGTTCGGTTTCGATAAGGATTCATTGCGCG
CCGAAGCTCAAGACAACCTGAAAGTATTGGCGCAACGCCTGAGTCGAACCAATGTCCAAT
CTGTCCGCGTCGAAGGCCATACCGACTTTATGGGTTCTGACAAATACAATCAGGCCCTGT
CCGAACGCCGCGCATACGTAGTGGCAAACAACCTGGTCAGCAACGGCGTACCTGTTTCTA
GAATTTCTGCTGTCGGCTTGGGCGAATCTCAAGCGCAAATGACTCAAGTTTGTGAAGCCG
AAGTTGCCAAACTGGGTGCGAAAGTCTCTAAAGCCAAAAAACGTGAGGCTCTGATTGCAT
GTATCGAACCTGACCGCCGTGTGGATGTGAAAATCCGCAGCATCGTAACCCGTCAGGTTG
TGCCGGCACACAATCATCACCAACACTAAGGCTAGGCAATATCTTGCCGATGCATGAGGT
TAGTGGATTTTGTACCAGGTACTGTTGCAATATTCGTGAAACGTCGGTCGGCATCGATGA
TGTGAAACAAACCCCCGCTTTTGCGGGGTTTGTTTTTTTGGGTGGTTTTCTGAAACGGCT

ATCGTCAGAATCGGGGTGCAGGTTCGGATTCGGATTCAGATTCAGATTCAGATTCAGATT
CAGATTCAGGTTTGTGTCCCATTGCCGCGCTTTATAGTGGATTAACAAAAATCAGGACAA
GGCGACGAAGCCGCAGACAGTACAAATAGTACGGAACCGATTCACTTGGTGCTTCAGCAC
CTTAGAGAATCGTTCTCTTTGAGCTAAGGTGAGGCAACGCTGTACTGGTTTAAATTTAAT
CCACTATATCGGTTGAAACTCTGATTTTAAGGCGGTAGGATGTGGGTTTGCCCATAGAAA
GGGAATCCTTTCTGTATCAAGCCCTGAAAGGGATAATTCATACAAATTCACGCCTTTCCC
CCTCATTGGGAAATGGATGGAATCGTGCCAGATGTGTGCGGCACTGTATGCCGGATATGG
TTTTATCATCAGCCCTTTTCGGTTGAAACCCCGTCAGTTGCAGCGATTGAGCCTAATCGG
TGGCGGAAGTTGCCGCTTTGCATTCGGGGCGGCGTGCAGTGCGGTGCTTTGATATGCCGT
TTGTGTGTTGAAACAGGGTGGTCGGTGCATACGGGTACGGTATGGCCAAAGCTAAAAGTG
AAATACGCTGAAACACTGAATGAGCCGCTTTATTGTTTGTACGGCCTTTGCTGCCTTGCT
ATGATTTAAATTGGATTCGCCCGCCGGATATTTTGGGATATGAAAGAATTTGACTTCATC
AAACGGTATTTGCAAACAGGCACGGATAATGATGTCGTATTGGGCATAGGCGACGATGCG
GCGATTGTCCGCCCGCGTGAAGGCTTCGATTTGTGTTTCAGTGCGGATATGCTTTTGAAG
GACAGGCATTTTTTTGCAGATGTCAAACCTGAAGACTTGGCTTGGAAGGTTTTGGCCGTC
AATATTTCAGATATGGCGGCGATGGGTGCGATACCGCGTTGGGTGTTGCTGAGCGCGGCT
TTGCCCGAATTGGATGAGGTATGGCTGAAACGGTTTTGCGGCAGCTTTTTCGGTTTGGCA
AAAAAGTTTGGCGTAACGTTAATCGGCGGCGATACGACCAAGGGCGATATGGCGTTCAAT
GTAACCATTATCGGCGAATTGCCGAAGGGTAGGGCGTTGCGGCGTGATGCGGCGGTTGCG
GGCGACGATATTTGGGTGTCGGGGCGTATCGGTATGGCGGCGGCGGCTTTGAACTGCCGT
CTGAAACGGTGTGTGTTGCCAGATGAAGTGTTTGCCGAATGCGAACAAAAGCTGCTCCAT
CCTGAACCAAGGGTTGGGCTGGGGCTTGCGCTGTTGCCGTTTGCCAGGGCGGCGCAGGAT
GTTTCAGACGGCCTCGCGCAAGATTTGGGGCATATCCTGACCGCTTCTGGCAAGGGTGCG
GAAATTTGGGCCGATTCGCTGCCGTCTTTATCCGTATTGAAAGATATTTTGCCCCGAGCG
CAATGGCTGTCTTATACTTTGGCGGGCGGCGACGATTACGAGCTGGTGTTTACCGCGCCG
GAAAGTTGCCGCAGCCGCGTATTTGATGCGGCGGAACGGTGCGGCGTGCCGGTAACGCGC
ATCGGCAAAATCAACGGAGGATGCCGTCTGAAGGTTTTAGATGCCGACGGCAGGGAATTG
GAACTACATTCTTTAGGATTCGATCATTTTGGCTGATTTTAAACCTGACTTTGCGTGGCT
GTTGAAACGGCCGTTGTGTTTTTTGGCTTTCGGTTTCGGCAGCGGGCTGGCTCCGTTCGC
GCCGGGCACATTCGGCACTTTGGCGGCACTGCCTTTGGCGTTTGTGCTGATTTTGCTCGG
CATAGACGGGCTACTGCTGGCTTTTTTGTGTATCGTGCTGTTTATGTGGGGCATACGCAT
TTGCGCTTATGCGGAACGTGAAACGGGTGTCAGCGACCACGGTGGGATTGTTTGGGACGA
GATTGTCGCCATGCTGTTTGTGCTGGCGTTTGTGCCGTTCAGGTGGACGTGGTGGCTGGC
GGCATTTGTCCTATTCCGTCTGTTTGACGCGCTCAAACCGTCTCCCGTCGGTTGGTTTGA
CAAGAATCTGCACGGCGGTTTGGGCATTATGGCGGACGATATGGCGGCTGCGGTGATGAC
TTTGATTGTCTTGAGGATTGCAATGCTGTTTTAAACGGTGCTGCCTTGTAAAAATGCCGC
CTGAAAGCCTTTCAGACGGCATTGTTTCGGAGGTTAACGCGTTACCGGTTTGTATTTGAT
GCGTTTCGGTTTCGCGCCTTCTTCGCCCAAACGGCGTTTCTTGTCGGCTTCGTATTCCTG
ATAGTTGCCGTCGAAGAACACCCATTTAGAGTCGCCTTCACACGCCAAGATATGCGTGGC
GATGCGGTCGAGGAACCAACGGTCGTGCGAAATCACCATCACGCTGCCGGCAAATTCCAA
CAATGCGTCTTCCAACGCGCGCAGGGTTTCCACGTCAAGGTCGTTAGACGGTTCATCCAG
CAGCAATACATTGCCGCCGCTCAACAAGGTTTTTGCCAAGTGCAGACGACCGCGTTCGCC
GCCAGACAATTGACCTGCAATTTTGCTTTGGTCGCTGCCTTTGAAGTTGAAACGCCCCAA
ATATTGGCGGGCGGGAATTTCAAACTGACCAACCTGCAAAATGTCGCGGCCTTCGGCAAT
GTTGTCGAACACGGTTTTGTCGTTTTGCAAACCTTCGCGGCTTTGGTCAATCAAGCTCAT
TTTCACGGTTTGTCCGATTTTCACCTCGCCGGAATCAGGCTGCTCTTTGCCCGAAATCAT
TTTGAACAGCGTAGATTTACCCGCGCCGTTCGGGCCGATGATGCCGACAATCGCGCCCGC
AGGCACTTTGAAGCTCAAATCGTCAATCAGCACTTTATCGCCGAACGATTTGGAAACATT
TACAAATTCAATCACTTCGTTACCCAAACGCTCGGCAACGGGAATAAAGATTTCCTGCGT
TTCATTGCGTTTTTGGTATTCGTAGTTGCTCATTTCTTCAAAACGAGCCAAACGCGCTTT
GGACTTGGCTTGGCGGCCTTTGGCATTTTGGCGCACCCATTCCAATTCCTGCTTCATCGC
CTTCACGCGCGCGGCTTCGGATTTTGCCTCGTTTTCCAAGCGTTTTTCTTTCTGCTCCAG
CCAAGACGAGTAATTGCCTTTCCACGGAATACCATGGCCGCGGTCGAGTTCCAAAATCCA
TTCGGCGGCGTTGTCGAGGAAGTAGCGGTCGTGCGTTACCGCAACGACTGTGCCGGGGAA
GCGCACGAGAAATTGCTCCAGCCACTCGACCGATTCCGCATCCAAGTGGTTGGTCGGCTC
GTCCAGCAAAAGCATATCGGGCTTGCTCAACAAGAGTTTGCACAAGGCAACGCGGCGTTT
TTCACCGCCGGACAAATTATCGATTTTGGCATCCCATTCCGGCAGGCGCAGCGCGTCGGC
GGCGATTTCCAATTCGTGTTCCGCACCGCCGCCCGTGGACGAACCTGCCGCAATAATCGC
TTCCAAGCGGCCCTGCTCTTCTGCCAACGCGTCAAAATCCGCATCAGGATTGGCGTACTC
GGCATACACTTCTTCCAAACGTTTCTGCGCGGCAGCCACTTCGCCCAAACCGCTTTCCAC
TTCCTCGCGCACGGTTTTTTCCGGATCAAGCTCAGGCTCTTGCGGCAGGTAGCCGATTTT
GATGCCGCCCATCGGCACGGCTTCGCCCTCAAATTCCTTATCCACGCCCGCCATAATCCG
CAGCACGGTGGACTTGCCCGCGCCGTTCAAACCGAGCAGGCCGATTTTCGCGCCGGGGAA
GAAAGAAAGGGAAATATCTTTAATGATGGTTTTCTGCGGCGGCACAACCTTGCTCACGCG
CAGCATAGAATAGACGTATTGTTGGGACATGGTTTTCTCGTTTTCATCAAACAAATTTCA
GACGGCCATTTTAACCGATAATTTGATTTAAGCCAGTTTATCCGCGAACCGGTATTGCCA
AAATCGGGCAGGATTCATAAAATCCGCTTATCCCTTTGAAATTATATAGACAAAAAAATA
ATAATGATAGGGGATCGCCGCCCCGGCAACCATTTCGGATTTCCAAAGCAAATATAGTG
GATTAACAAAAATCAGGACAAGGCGACGAAGCCGCAGACAGTACAGATAGTACGGAACCG
ATTCACTTGGTGCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCTAAGGCGAGGCAACG
CCGTACTGGTTTTTGTTAATCTACTATACTTTTCAAATCAAAAAAGGATTTACCTTATGT
CGGAATATACGCCTCAAACAGCAAAACAAGGTTTGCCCGCGCTGGCAAAAAGCACGATTT
GGATGCTCAGTTTCGGCTTTCTCGGCGTTCAGACGGCCTTTACCCTGCAAAGCTCGCAAA
TGAGCCGCATTTTTCAAACGCTAGGCGCAGACCCGCACAATTTGGGCTGGTTTTTCATCC
TGCCGCCGCTGGCGGGGATGCTGGTGCAGCCGATTGTCGGCCATTACTCCGACCGCACTT

GGAAGCCGCGTTTGGGCGGCCGCCGTCTGCCGTATCTGCTTTATGGCACGCTGATTGCGG
TTATTGTGATGATTTTGATGCCGAACTCGGGCAGCTTCGGTTTCGGCTATGCGTCGCTGG
CGGCTTTGTCGTTCGGCGCGCTGATGATTGCGCTGTTAGACGTGTCGTCAAATATGGCGA
TGCAGCCGTTTAAGATGATGGTCGGCGACATGGTCAACGAGGAGCAGAAAGGCTACGCCT
ACGGGATTCAAAGTTTCTTAGCAAATACGGGCGCGGTCGTGGCGGCGATTCTGCCGTTTG
TGTTTGCGTATATCGGTTTGGCGAACACCGCCGAGAAAGGCGTTGTGCCGCAGACCGTGG
TCGTGGCGTTTTATGTGGGTGCGGCGTTGCTGGTGATTACCAGCGCGTTCACGATTTTCA
AAGTGAAGGAATACGATCCGGAAACCTACGCCCGTTACCACGGCATCGATGTCGCCGCGA
ATCAGGAAAAAGCCAACTGGATCGAACTCTTGAAAACCGCGCCTAAGCCGTTTTGGACGG
TTACTTTGGTGCAATTCTTCTGCTGGTTCGCCTTCCAATATATGTGGACTTACTCGGCAG
GCGCGATTGCGGAAAACGTCTGGCACACCACCGATGCGTCTTCCGTAGGTTATCAGGAGG
CGGGTAACTGGTACGGCGTTTTGGCGGCGGTGCAGTCGGTTGCGGCGGTGATTTGTTCGT
TTGTATTGGCGAAAGTGCCGAATAAATACCATAAGGCGGGTTATTTCGGCTGTTTGGCTT
TGGGCGCGCTCGGCTTTTTCTCCGTTTTCTTCATCGGCAACCAATACGCGCTGGTGTTGT
CTTATACCTTAATCGGCATCGCTTGGGCGGGCATTATCACTTATCCGCTGACGATTGTGA
CCAACGCCTTGTCGGGCAAGCATATGGGCACTTACTTGGGCTTGTTTAACGGCTCTATCT
GTATGCCTCAAATCGTCGCTTCGCTGTTGAGTTTCGTGCTTTTCCCTATGCTGGGCGGCT
TGCAGGCCACTATGTTCTTGGTAGGGGGCGTCGTCCTGCTGCTGGGCGCGTTTTCCGTGT
TCCTGATTAAAGAAACACACGGCGGGGTTTGAGCGATGAGCGATACCCCCGCTACCCGCG
ATTTCGGTCTGATCGACGGGCGTGCCGTAACCGGCTATGTGCTGTCCAACCGGCGTGGTA
CGCGTGTCTGCGTGCTGGACTTGGGCGGGATTGTGCAGGAATTTTCCGTTTTGGCAGACG
GCGTGCGCGAAAACCTCGTGGTGTCGTTCGATGATGCGGCTTCCTATGCGGACAATCCGT
TTCAGATTAACAAACAGATAGGGCGCGTGGCCGGACGCATCCGCGGTGCGGCGTTCGACA
TCAACGGCAGGACTTACCGCGTGGAGGCCAACGAAGGCAGGAACGCGCTGCACGGCGGTT
CGCACGGGCTGGCCGTTACCCGTTTCAACGCGGTGGCGGCAGACGGCCGTTCGGTGGTGC
TGCGCAGCCGCCTGCAACAGTCGGCCGACGGTTATCCCAACGATTTGGATTTGGATATTT
CCTACCGCTTGGACGAGGACGACCGGCTTACCGTTAGCTATCGCGCCACCGCGCTCGGCG
ACACGGTGTTCGACCCGACGCTGCACATTTACTGGCGGCTGGACGCGGGCCTGCACGATG
CGGTTCTGCATATTCCGCAGGGCGGACATATGCCGGCCGATGCCGAAAAACTGCCCGTCT
CAACGGTTTCAGACGACCTCGAAGTATTTGATTTCAGCCGGCCCAAGCCGCTGGATGCCG
CCGTTGCCGCCCTGCGCCGCGAAACGGGTCGGGCCGGTTTTGACGACGCTTACCGCGTGC
CGTCCGATATAGGCCGTCCCGCCGCTGTGTTGCAAGCCGGACGCCGCCGTCGTATCAGCA
TATACAGCGACCGCAATGGCTTGGTCATCTTTACCGCCGCCCCGCAGGATTTCGCGCGGC
ACGATGCGGGCGTTTACGACGCGCTGGCGACCGAGGCGCAGACGCTGCCCGACAGCCTGA
ATTGGCCCGAGTTCGGCAATATTCGTCTGAACAAGGGTGATACCAGGGAGGCGACGATTG
CTTACGGCATCGAATCCCTTTCTTAGGAGCTTCCTAACACCGGTTGCAGACGACCTTTTT
ATAGTGGATTAACAAAAACCGGTACGGCGTTGCCTCGGCTTAGCTCAAAGAGAACGATTC
TCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATTTGTACTGTCTGCGGCTTC
GTCGCCTTGTCCTGATTTTTGTTAATCCACTATAAGATTTCACCATTCCCTCAAATCAAT
CCAAACAGGAGCTTCATAAATGTACACAAGAATCATGGAAATCAGCCCTTGGACGCTGCG
TTCGGCAAAACTGGAAAAAGAACACAAACGGCTGCAAGAGAGCCTGACCAGCTTGGGCAA
CGGCTATATGGGTATGCGCGGCAGCTTTGAGGAAACCTATTCCGCCGACAGCCACTTAGG
CACCTACATCGCCGGCGTGTGGTTCCCCGACAAAACCCGCGTCGGCTGGTGGAAAAACGG
CTATCCCAAATATTTCGGCAAAGCCATCAACGCGTTCAATTTCAGCAAAGTCAAAATCTT
TGTCGACGGGCAGGAAGTGGACTTGGCGAAAAACGACGTTGCTGGCTTCTCCGTCGAACT
CGATATGCAGCACGGCGTGTTGCGCCGCTCGTTCACCGTATTCGGTGTGCGTTTCAATGT
GTGCAAATTCCTGTCTGTCGCACAAAAAGAGCTGGCGGTCATCCGCTGGGAAGCCGTATC
CGTTGACGGTAAAACCCACCAAGTCCGCATCGATTCCATCATCGATGCCGACGTGAAAAA
CGAAGACTCCAACTACGAAGAAAAATTCTGGCAGGTATTGGACAAAGGCGTTTCAGACAG
TCTCTCCTACATTGCCGCCCAAACCGTCGCCAATCCCTTCGGCGTGGAACAATTCATCGT
CAACGCCGAGCAAACCTTTGCCGGCAGCTTCAAAGCCCTCGGCGGCAGCCAAACCGACTG
GCAGGTCTCCAATTCTTTTGAATCCGAAGTCGGCAGCACACCCGAAACCTTTGAAAAACG
CGTGATTGTTACCACCAGCCGCGATTATCAGAGCTTGGAAGCAGTGAAAGCCGCAGGCCG
CGCCTTGTCGGAAAAAATTGCAGGCGTTGCGTTTGAAACCTTGCTGGACGCGCACAAAGC
AGGCTGGCTGCACCGTTGGGAAATCGCCGACGTGGTCATCGAAGGCAGCGACGAAGCGCA
GCAGGGCATCCGCTTCAACCTGTTCCAACTGTTCTCCACCTACTACGGCGAAGACGCGCG
ACTGAACATCGGCCCGAAAGGCTTTACCGGCGAAAAATACGGCGGCGCGACCTATTGGGA
CACCGAAGCCTACGCCGTACCGCTCTACCTCGCACTGGCCGAACCCGAAGTTACCCGCAA
CCTGCTGCAATACCGCCGCAACCAACTGCCGCAGGCGCAGCACAACGCGCGCGAACAGGG
CTTGGCGGGCGCACTCTATCCGATGGTAACGTTTACGGGCATCGAGTGCCACAACGAATG
GGAAATCACCTTCGAGGAAATCCACCGCAACGGCGCGATTCCTTACGCCATCTACAACTA
CACCAACTACACCGGCGACGAGGGCTATCTTGCCAAAGAAGGCTTGGAAGTTTTGGTCGA
AGTGTCCCGCTTCTGGGCGGACCGCGTCCACTTCTCCAAACGCAACGGCAAATACATGAT
TCACGGCGTAACCCGTCCCAACGAATACGAAAACAACATCAACAACAACTGGTACACCAA
CACCCTCGCCGCATGGGTATTGGACTACACCCGCGAAGCCTTGGCGAAATACCCGCGTCC
GGATTTGAACGTGCGTGCCGACGAGTTCGAAAAATGGGCGGACATCAGCGCGAATATGTA
CCGTCCGCATGACGAAGAACTCGGCGTATTCGTGCAGCACGACGGCTTCCTCGACAAAGA
CATCCGCCCCGTGTCCGCGCTTTCGCCCGACGATTTGCCGCTCAACCAAAAATGGTCGTG
GGACAAAATCCTGCGTTCGCCCTTTATCAAACAGGCGGACGTATTGCAAGGCATCTACTT
CTTCAGCGACCGTTTCAATATCGACGAAAAACGCCGCAACTTCGACTTCTACGAACCGAT
GACCGTGCATGAAAGCTCGCTGTCGCCCTGTATTCACTCTATTCTCGCCGCCGAACTGGG
CAAAGAAGAAAAAGCCGTGGAAATGTACCAGCGCACCGCCCGCCTGGACTTGGACAACTA
CAACAACGACACCGAAGACGGCCTGCACATCACCTCCATGACCGGCTCGTGGCTCGCCAT
CGTCCAAGGTTTCGCCCAAATGAAAACCTGGGGCGGCAAACTCAGCTTCGCACCGTTCCT
GCCGAGTGCGTGGACAGGCTACGCCTTCCACATCAACTACCGCGGCCGTCTGATTAAAGT

CGCCGTCGGCAAAGAAAACGTCGTCTTCACTCTGCTCAAAGGCGAGTCGCTCGATTTGCA
GGTGTACGGCAAAGACATCACGCTCGACGGCAGCCACACCGTTGCGTTGGAAAAATAAGG
AGGGCGCAAAATGACTTTCACTGCAGTCCTATTTGACCTCGACGGCGTCATCACCGACAC
CGCCGAATACCACTACCGCGCATGGAAAAAGCTCGCCGAAGAACTGGGCATCAGCATTGA
CCGCAAGTTTAACGAGCAGCTCAAAGGCGTGTCGCGCGACGATTCGCTCAAACGCATCCT
CGCGCACGGCGGCAAAACCGTCAGCGAAGCCGAGTTCGCCGAACTGACCCGCCGTAAAAA
CGACAACTACGTCGAGATGATTCAGGCAGTCAAACCCGAAGACGTGTATCCCGGCATTTT
GCCCCTGCTGGAAGCATTGAGGGCAAACGGCAAAAAAATCGCCCTTGCGTCCGCCAGTAA
AAACGGCCCGTTCCTGCTGGAACGCATGGGGCTGACCCACTTCTTCGACGCCATTGCCGA
CCCTGCCGCCGTCGCACATTCCAAACCCGCCCCCGACATCTTCCTCGCAGCAGCCGAGGG
CGTAGATGCGGACATCCGCCAATGCATCGGCATTGAAGACGCCGCCGCCGGCGTCGCCGC
CATCAAAGCCGCCGGCGCCTTGCCCATCGGCGTGGGCAAAGCCGAAGACTTGGGCAGCGA
CATCGCGCTGGTCTCCGGCACCGCCGAGCTGACCTACGCCTACCTGCAAAGCGTGTGGGA
ACAGTCGGGCAGGTAAAACGCGTCAGATAAAGTGTCAAGGAAGCAAAAGACCGTCTGAAC
AGTGTTTCAGACGGCCTTTTTGCTTTTAGAACAGAATGATAACCCAACTTACGCAACCCT
AAAAACTAAATGCCAATCTCTTAACCATGCTATTCAAATTTATTTGAACGATTTTTTTTC
TAACCAGCCAACCTTAACAATCACTATTAAAATGCGCGCCGATGTTCTGTCTCCGCCTGT
ATGCGGCTTGGGCGACGGCGAGGCTGCATTCGAGCAGGTTGCGGTTTTCGTATTCGGACG
CGGTGTGCGGTTCGGCTTGGTTTTGCTTCCAAAGCTGCAGTTGGGCGATGGCGCGGCGCA
GGCCGGTATCGTTGCGTAGGATGCCTAGATGGCGTTGGTTGAACGTTTGCAGGACGGGGC
GGCTGAATGTGTTTTGAAGGTCGTCTGAAAAGATGCCTGCTTCGGCGGAGAGGCTTTCAG
ACGGCCTTTGGAATGGTTCGGCTTGGAATGCTTGTCCGTCTGCGATGGCTTGGGCGCAGA
GCCTTGCGGTCACGACGCATTCGAGCAGGGAGTTGCTGGCAAGGCGGTTGGCTCCGTGCA
GCCCAGTGCAGGCGGTTTCGCCCAAGGCGTAGAGCTGCGGCAGGGAGGTTCTGCCGCAGG
GGTCGGTTTGGATGCCGCCGCAGGTGTAGTGTTGCACGGGGCGGACGGGGATGGCTTGGC
GCGTGATGTCTAGGCCGCATTGGGATAAACAGTGTCGATGGATGGATGGGAAATGCCGGC
GGACGAACGCTGCGGGTTGATGGCTGATGTCGAGCGAGACGAAGTCTTGCGTTTGTTTGG
CGATTTCGGCTGCGATGGCGCGGGCAACGATGTCGCGCGGTGCGAGTTCGGCGCGGCGGT
CGTAATGCGGCATAAATCGTTCGCCCGCTTGGTTGGTCAGGATGCCGCCTTCGCCGCGCA
CGGCTTCGGAAATGAGGAAGGTGCGTCCGTTTTCAGACGGTCTTGCCAAGCCTGTGGGGT
GGAATTGGATAAATTCGAGGTTTCCAACTGCGCAGCCTGCGCGTATCGCCATGGCGATGG
CGTCGCCCGTGCATTCGGGCGGCGTGGTGGTGGCGGCGTAAATCTGTCCCAAGCCGCCGC
CTGCGAGTACGGTATGGCGGGCGCGGATGCGGTAGGTTTCTTGTGTTCGGCAGTCGAGGA
CGGTCAGTCCGCACGCCGCGCCTGATTCGGTTTGAATGTCCAACGCCATCTGCCGCTCGC
AAACGCGGATGTTCGGGCGGCGGCGTATTTGGGCAATCAGGCTCTGCATGACGGCTTCGC
CCGTGTAGTCGGCGACGTGGGCGATTCGTCGGCAGGTATGCCCGCCTTCACGCGTCAGGT
GCAGGCCGTTATGATTCCGGTCGAACGCCACGCCCTGCGCCAGCAGCCATTCGATTGCCG
GTTTGCCCTGCGACAGGATGGCGCGGACGGCGGCTTCATCACACAAACCCGCGCCCGCTT
CCAAAGTATCGGCAACGTGTTTTTCGATGTCGTCCTCTCCCGACCACGCCGCCGCAATCC
CGCCTTGCGCATGACGGCTGGCGGTGTCGTCCAGCCGGTTTTTGCACAAAATAACGATGC
GGAACGATTCAGGCAGCGACAGGGCGAGCGTCAGTGCCGCCAGCCCGTTTCCGGCAATCA
ATACGTCGCAATCGGTTTGCATGGTGTTGTCCTTGTTTGAGAGGCCGTCTGAAACGGTAT
AGTGGATTAATCAATGCCCCGACATATGCGACATGGTATTGAGAAGCACCACGCCCAGCA
AAATCAAACCGATGCTGACAATCCCAATGAAATCAGCTTTCTCACCGAAAAACACCACGC
TGACTAAAGCCGTTAAAACCAGTCCCACGCCTGCCCAAATGGCGTATGCTGTAGCCAGCG
GCATGGTTTTCAGTGTCATAGACAAGGCCCAAAAACACACCGAAAAGCTGACTACCACGC
CAATAGAAGGCCACAGTTTGCTAAACCCGCCACTCAGTTTGAGCATGGAAGAACCGCAGA
CTTCGCTTAAAATTGCTACAGTCAGAAAGAGCCAGTGCATTTGCATGTTTTTACCTGATA
AATGAAAGAAAGTATAATTATATCAATGCAATAAAATAAAAAAACAGTCTTGTTGTTAAA
GATTTTTTGTGTGCAAATCCCGTCTTGGGAAAGCAGGCGGGCGGTATTTTCAGGCTGCAC
CCATTACGAACGACAAATCAGGCGGGGCCCATGCCGTTGAACACATCTTTTTTCTTCAGC
CCTGCCGCAAAGTCGAGCATACGCTGCAAAGGCAGTTTGGCGGCTTCGCCCAGCTTCCTG
TCCAACAGGATTTCGTTACGTCCGCTTGTCAGGGCGTATTTGATGCCGCCCAGCGAATTC
ATCGCCATCCACGGGCAGAACGCGCAGCTTTTACAGCTTCCACCGTTGCCCGCCGTCGGC
GCGGCGATAAATTGTTTGTCGGGCGCCTGCTTTTGCATTTCGTGCAGGATGCCCAAATCG
GTCGCCACGATGAATTTTTTTTCAGGACGCGATACGGCGGCTTTGAGCAGTTTGCTGGTC
GAGCCGACCACGTCGCCCAGTTCGATGACGCTTTGCGGCGATTCAGGATGAACCAGCACC
ACCGCTTCGGGGTGTTCCGCCTTCAACGCCGCCAGCTCTTGCCCTTTGAATTCGTTGTGA
ACGATGCACGAACCCTGCCACAACAGCATATCCGCGCCCGTTTCGCGGCAGATGTAGTCG
CCGAGGTGGCGGTCGGGTCCCCAAATCAGCTTCTCGCCGCGTGATTTCAAATACGATACG
ATTTCTAACGCCACCGAAGACGTTACCACCCAATCGGCACGCGCTTTCACGGCGGCGGAA
GTGTTGGCGTACACCACCACCGTGCGGTCGGGGTGTTGGTCGCAAAACGCTGAAAACGCT
TCTTCCGGGCAACCCAAATCCAAAGAACATTCCGCCTCCAAATCAGGCATCAGCACCGTT
TTTTCAGGGCAGAGGATTTTCGCGCTCTCGCCCATGAAGCGCACACCAGCCACCACCAGC
GTACCGGCTTCGTGTTCCGCACCGAAGCGCGCCATTTCCAGCGAATCGCCCACGCATCCG
CCCGTCTCCAAAGCCAAATCCTGAATCAGCGGATCAACGTAATAATGCGCCACCAAGACC
GCGTTTTTCTCCTTCAGCAAAGCCTTGATTTCGTCTTTCAGACGATCTGCCGTCTCGCGG
TCGGGCGTGTCGGCAACCTTCGCCCACGCCTGACGGATTTGGCAGGCGGAAGTCGGCGTT
TGGATGAGTGGCATATCGTAGTCGAACGAGCGGCGGGCGGCGGTTTGCATGATGTTTCCT
TGTAGCTGTTTTTCAGACGGCATGAAGGTTTGCCGTCTGTTTTTCAAACTGTTTTTACAT
TATGCTCAACTTGAGTATAATATGCAAGGTCGTCTGAAAACAGGTTTGCAATACCGTAAA
ACCGACCCGCTTCGTTCCGACAAACCGCTTTGGTTTACAATAAAGCCTTTCCCACCCGCA
GAAAGCCGAGCATGGATGCCTACCCCGAAGCCGAAGCCCCGCCGCAAAGCATCGTCGAGC
TGGTTCCCGTATTGATTGCCGTTACCGACGGCGGCCTGCGGGTATTGACCGTCGCCCAAG
GCATGCTCCTGCCCAACGGCCCGCTCTCCCCCCTGCGCAATTCCTTGCAGGCAGGCGTAA

AACTGTGGGTCGCCAAGCAGACTTCGCAGCCTATGGGCTATGTGGAACAGCTTTACACCT
TTGTCGATACCCACCGCCGCAACGAACACGGCATGCCCGTGCTGTACGTCAGCTATTTGG
GGCTGGTGCGCGAGGCAGCCGACAGCATCCTGCACCCGGATGCGAAATGGCAGGACTGCT
ACGGCTATTTCCCGTGGGAAGACTTGCGCACCGACGGCGGGCAGCGCGACGCCGTCGTCG
GCCGCCTGCGCATTTGGGCAAACTCGGCGGACACGGAGGAAGTGCGCCAAAAGCGGCTCA
AGCGCATTCATTTGTGCTGGGGGGTCGAACCGGAAAACTGGTCGGAAGAATACGTTTTGC
AACGCTATGAAATGCTGTATGAAAGCGGCCTGATAGCGGAAGCCGCCGAGCCGCAGGCAA
ACTTCGACTTCGCGCTTACGGGGCAGCCCATGCGCCACGACCACCGCCGCGTACTGGCGA
CCGCCCTGTCTCGCCTGCGCGCCAAAATCAAATACCGCCCCGTGATTTTTGAACTGATGC
CGCCCGAATTCACGCTGCTGCAACTGCAAAACAGCGTCGAAGCCATCAGCGGCAGATTGC
TGCACAAGCAAAACTTCCGCCGCCAGATTCAGCAGCAAAACCTCATCGAGCCGTCGGATA
CCGGCGTATCGGGCAGCAAAGGCCGTCCCGCGCAGCTTTGCCGCTTCCGCGACGACGTCC
TGCCCGACAGGCTGATTTCGGACATCGGACTGCCGCTGGGCAGCCGTTAGCCCGTTTTCA
GACGACCTATAGTGGATTAACAAAAATCAGGACAAGGCGACGAAGCCGCAGACAGTACAA
ATAGTACGGAACCGATTCACTTGGTGCTTGAGCACCTTAGAGAATCGTTCTCTTTGAGCT
AAGGCGAGGCAACGCCGTACCGGTTTTTGTAAAATGAAGTTTTGCCCCATCGGTGCAACA
TCAATCTTTTTCAACAAAGGAAACCCCATGCCGTCTGAAAAAACCCTCTTTCCCCTGCCC
GACACCCTGTTGCGCCCCATAGTAGAACAAGCCTTGAGCGAAGACTTGGGCAGGCGCGGC
GATATTACGTCCGCCGCCGTCATCGCCCCCGACAAAACCGCCAAACTCTTCCTTGTCAGC
CGCGAAGACGGCGTTATCGCCGGCATGGACTTGGCGCGTCTCGCCTTTCAGACGATGGAT
CCGTCCGTCCGCTTCCAAGCCGAAATCCGAGACGGGCAAGCCGTCCGCGCAGGTCAGACG
CTTGCCGCCGTCGAAGGCAACGCCCGCGCGCTGCTCGCCGCCGAACGCACCGCGCTCAAC
TACCTCACGCACTTAAGCGGCATCGCCACCGCCACCGCGCGTGCCGTTGCCGAAGTCGCC
GAATACGGTACAGACATCGTGTGCAGCCGCAAAACCATCCCCCTGCTGCGTGTCCTGCAA
AAATACGCCGTCAGGGCAGGCGGCGGTGTGAACCACCGCATGGGTTTGGACGACGCCGTG
CTCATCAAAGACAACCACCTCGCCTATTGCGGCAGCATCGCCCAAGCCGTGCAGCAGGCA
AAACAGGCTGTCGGAGCATTGACCTGCGTGGAAATCGAAGTGGATACGTTGGCACAACTG
GACGAAGCCATCGCAGCGGGCGCGGAACGGATTTTGCTGGATAACATGGACGACGAAACC
CTGAAAGAAGCGGCAAACCGCTGCCACACGCAAACCGCCCACCCCCACACCATCTATTGC
GAAGCATCGGGCGGCATCGGCTTCGACCGCCTGAAGCGCGTGGCGCAAACCGGAGTGGAC
GGCATCGCCCTCGGCTATCTGACCCACAGCAGCCGTTCGTTGGACATAGGTTTGGATTTC
GTGGCGTGAGTTTTAGGGTGCGGGCGGCTGTCTGATATGTCAGGCAAGGAACCGCTTAAC
CCTAATCCGGTTATTGCCTCAGGGAGGAAATGCCGTCTGAAAGATTCTTCAGACGGCATT
TTTCGTAAAGGTCGTGATGCTTTAGAAAAAAACAGCATTTCAGGCAGGTATTTTGTTTGCC
CGACAGCGCGGCGGCATCGGTAGGGCAGGAAAAAGGACGGGGGGCGGCAGTTTTATGCCG
TCTGAAAGCCCGCCTTTACGCTTGTTTGCAAAAAAAGTGGGAAAAGGAACATACAATCCT
GTACAATCATCCATAAATATTTGATTTATAATACGATTTATAAAGATAATCACAATCATC
CATATCTGCCGCCCGTCAATCCGCTTGGCGGGCGGCAAAGGTTTTAGGAATACCGATGAA
CACAATACCGCTCCACACCATACTCAAACTTATGGCGCATCCCGAACGTATGGCGATACT
GATTCAATTGTTGGACAGCGAACGCAATATCGCCGAACTGGCAAAATCCTTATCCCTGCC
GGCCACCGCAGTTTCCAACCATTTGAACCGCCTGCGCGTGGAAGGTCTAGTCGATTTTAC
GCGTTACCACCGCATTATCGAATACCGCCTGGTTTCCGAAGAAGCGGCGGCGATTCTGCA
CACGGTTCGCGATTTGGAAAACAAACGCGTGGCATAGTGTTAGAATCCTTTCCTTTTGCC
GTCTGAACGTTTCAGACAGCATTTTTCGGAAATGTTATGAAAATCACCACTTGGAATGTC
AATTCGCTCAATGTGCGGCTGCCGCAGGTGCAAAACCTGCTTGCCGACAATCCGCCCGAT
ATTTTGGTTTTGCAGGAACTCAAACTCGATCAGGACAAATTTCCGGCCGCCGCTTTGCAA
ATGATGGGCTGGCACTGTGTTTGGAGCGGGCAGAAAACCTACAACGGCGTGGCAATCGTC
AGCCGCAGCGTGCCGCAGGACGTGCATTTCGGTTTGCCCGCACTGCCGGACGATCCGCAA
CGGCGCGTGATTGCGGCAACCGTCAGCGGCGTGCGCGTCATCAATGTCTATTGCGTCAAC
GGCGAGGCTTTGGACAGCCCCAAATTCAAATATAAGGAACAGTCGTTTGCCGCACTGACG
GAGTTTGTCCGCGATGAAATGACCCGCCACGGCAAACTGGTGTTGCTGGGCGATTTCAAT
ATCGCGCCTGCCGATGCGGACTGTTACGACCCTGAAAAATGGCACGAAAAAATCCACTGT
TCGTCCGTCGAACGGCAGTGGTTTCAAAACCTGCTGGATTTGGGACTGACCGACAGCCTG
CGCCAAGTCCATCCCGAAGGCGCGTTCTATACCTGGTTCGACTATCGCGGCGCGATGTTC
CAACGCAAACTGGGCCTGCGTATCGACCATATTTTGGTGTCGCCTGCGATGGCGGCGGCG
TTGAAGGATGTCCGCGTCGATTTGGAGACGCGCGCGCTGGAGCGTCCGAGCGACCACGCG
CCGGTGACGGCAGAATTCGATTGGTAAAAGACCGTGTTTTGATATGGCGTTGACAAGCAT
CCTTATCTTCAATTTATTCAATAGGATAGCTTTCTATCTGACTGAAAAATAATTGCCTTT
CCCCGGCAAACAGCCGAAATCGGCGGATTGTTCAAACACAGCCTATTTTCCTGAAAAATT
TATGAAATACATAGGGTTAATATCAGATTTTGGAGCAGTAAAATTTATTATGTACACTAA
TCCAAAACAAAATCAAATATTGAAAACTAGATTTATTTTCGAATAAATAGAAAGCCGTCT
TATATATAGTAATAAATTAATAACCCTGTTTTTCCTATTGCCTTTATTGTGCCATGCAGT
TGAGTTTGATGAAACTCAATATAACGACTGTAAAGATAAATCTATGTTATGTGCTGTCAG
AATTGATTCTCCCAAAGGCAATAACTATAGTGGATTAACAAAAATCAGGACAAGGCGACG
AAGCCGCAGACAGTACAAATAGTACGGCAAGGCGAGGCAACGACGTACTGGTTTAAATTT
AATCCACTATATAAATCTATGTGGTTTGACAATGGCAAGTTAGTATTTATATCCTTTACT
AATCAACAAATGGAAAATCAAAGTCGCCCATCTCTAGCGATGTTTATTAGTGATGACAAA
ATATCCAGTACCAATATTGATGAATTTTTAGCATCTTTCGATCCTGATAAATATCGAATA
TTTCATGATCCAAGATATAAATTTTTACCTAGTATGTCGAACTCATTGTAATCCTTATTC
TCTTTTTGATATTGATAGCAAATATAAACCTGATGAGAAAGATAAAATCTTTTTTTCAAT
CCCGACAGATAACACAGATTTTTATAAGGGTTTTTATTTAAATAAGGATTATATAGAAGG
TATATATCCTAGTAGGCATAATGGCAGCTATTACAAAATATAGTGGATTAAATTTAAACC
AGTACAGCGTTGCCGTACTATTTGTACTGTCTGCGGCTTCGTCGCCTTGTCCTGATTTTT
GTTAATCCACTATATCTGCATCAGTTTCATGAAACGCAAGTCGGAAGCGTCAAACAACTG
ATTGCCCATTTTGACCGGCTGATTGACGAATTGGACAAACAAATCGACGACCACACCCAC

ACGCATTTTGACGGCAAAGCCCAAGTGGCAGAACAAATCAAAGGCATCGGTTCGATAACG
ACGGCTACGCTGATGGCGATGCTGCCCGAATTGAGGCGGCTGTCGCACAAACGGATAGCG
GGTTTGGCCGGCATTGCCCCGCACCCGAGGGAGAGCGGGGAAACCAAATTCAAAAGCCGC
TGCTTTGGCGGAAGGTCTGCGGTGCGTAAGGCACTGTATATGGCTACCGTGGCAGCGACA
CGTTTTGAACCGCTTATTCGGGATTTCCACCAACGCCCCCTGTCCGAGGGTAAGCCGTAT
AAGGTTGCCGTTACGGCATGTATGCGCAAACTCCTGACGATATCGAATGCCCGGATGCGT
GATTATTTTGCCGAAAACGATACCGCCGAAAACGGTATCTAAACGGCTTGATTTGAGTTT
TGGTATTTTTGCCCGACGGGGTGAAAAATACAGTTGCTACGGCTCGATGAATCGTCAGAA
ATACCTGCATCGTCATTCCCGCGCAGGTGGGAATCCAGACCGGTCGGTGCGGAAACTTAT
CAGGTAAAACGGTTTCTTGAGATTTTTCGTCTTGGATTCCCACTTTCGTGTGAATGACGG
AATCTAGGTTCGTCGGAATGACGTGGTGCAGGTTTCCGTATGGATGGATTCGTCATTCCC
GCGCAGGCGGGAATCTAGTCTGTTCGGTTTCAGTTATTTTCGATAAATGCCTGTTGCTTT
TCATTTCTAGATTCCCACTTTCGTGGGAATGACGGGATTTTAGGTTTCTGATTTTGGTTT
TCTGTCCTTGTGGGAATGACGGGATGTAGGTTCGTAGGAATGACGTGGTGCAGGTTTCCG
TGCGGATGGATTCGTCATTCCTGCGCAGGCGGGAATCCAGTCTGTTCGGTTTCAGTTATT
TCCGATAAATGCCTGTTGCTTTTCATTTCTAGATTCCCACTTTCGTGGGAATGACCGTTC
AGTTGCTACGGTTACTGTCAGGTTTCGGTTATGTTGGAATTTCGGGAAACTTATGAATCG
TCATTCCCGCGCAGGCGGGAATCTGGAATTTCAATGCCTCAAGAATTTATCGGAAAAAAC
AAAACCCTTCCGCCGTCATTCCCACGAAAGTGGGAATCTAGAAATGAAAACCAACAGGAA
TTTATCGGAAATGACCGAAACTGAACGGACTGGATTCCCGCTTTTGCGGGAATGACGGCG
ACAGGGTTGCTGTTATAGTGGATGAACAAAAACCAGTACGGCGTTGCCTCGCCTTAGCTC
AAAGAGAACGATTCTCTAAGGTGCTGAAGCACCAAGTGAATCGGTTCCGTACTATCTGTA
CTGTCTGCGGCTTCGTCGCCTTGTCCTGATTTTTGTTAATCCATTATAAAAATGCCGTCT
GAAAGGTTTTCAGACGGCATTGGTTCACGGGCCGCGCCCGGGTATTTCGGCAAAATCAGT
CGGCGACCGCCATCAGGCTGGCGTTGCCGCCGGCGGCTGTGGTGTTGACGCTGCAAGAGA
TTTCTTCAAACACTTGCAGGATGTCGAGTCCGTTTTCCGAAGGGAGGATGCGGATGAGTG
CGCCGTCGTGGGCGGCAAGTTCCTGTTTGCGCGCGCTGTCCAAAGGCGACAGGGCGGCAA
CGTGGCTGATGCCGGCGGTTTCGGGTTTGCCGTTGACCAGCAGCAGACCTTCCAAGTCGG
CAGTGTAGGAAGCCAAGGGGCTGTCGGGTTCGACCACTGCCTGTATGCCGGAGGCGGCAA
GTTCGGTCAGTGCGGCAAAGGCTTGAACCGTGCTGCCGCCGTGTATCCAAACGCGTTTGG
GCGCGTGCCATGAGATGCTGTTGCGCTCGCCGGTCGGTCCGGTAAGGACGGTTTCGGCAC
GGCGCAGGGTGCGGATGCGGGCGTGTCCCAAAGCGGCCGCTGCGGCTTTTTTCTCTTCGG
CGTTGAACGGTAGTTTGTGAACCAGTGCTTCGAGGCGTTTGAGTGCGGCTTCGTCCGCCT
GTCCGATTTGGCTCAGGGTCGGGGCAACCCATTCGCCGGCGCGGGTCAGTTTTTGCAGGT
AGAACGAACCGCCTGCTTTGGGGCCTGTGCCGGACAGACCGTGTCCGCCGAAGGGCTGTA
CGCCGACGACTGCGCCCACGATGTTGCGGTTGACGTAAACGTTGCCGGCTTCGATCCGGC
TGCGGATCTGGCGTACCCTGCCTTCGATGCGGCTGTGTACGCCGTGGGTCAGGGCGTAGC
CTTTGCTGTTGATTTGGTCGATGACGTTGTCGAGTTCGTCGGCGCGGTAGCGGACGACGT
GCAGGACGGGACCGAAGACTTCGCGTTGCAGTTCGTTGAGGTTGTTCAATTCAAACAGGA
TGGGGCGAACGAACGTGGATTTTTTGGAATCGACATCGGCGCCGGTTTTGACTTCGTGGT
AGGACTTGGCAACACCTTTCATTTTGTTGATGTCGTTCAACAGGTTTTGCTGTGCTTCGG
CATCGATGACGGGGCCGACATCGGTAGTGAGCTGAATCGGTTTGCCGACGACGAGTTCGT
CCATAGCGCCTTTGATCATGTCGAGCATACGGTCGGCAACGTCTTCTTGGACGCACAAAA
TGCGCAGGGCGGAGCAGCGTTGTCCCGCGCTGTCGAAGGCGGAGTTCAATACGTCGGCGC
AGACTTGCTCGGCAAGTGCGGTGGAATCGACAATCATGGCGTTTTGTCCGCCGGTTTCGG
CAATCAGGACGGGATTGTCGCCGCGTTTGGCAAGGGCTTTGTTGATCAGGCGCGCCACTT
CGGTCGAGCCGGTGAAAATCACGCCGCCGATGCGGGCATCGTTGGTCAATGCCGCACCCA
CGTCGCCTGCGCCGAGGACGAGTTGCAGGGCGGAAGTCGGGATGCCCGCTTCGTGCATGA
GGGAAACGCCATAACCGGCAATCAGGCTGGTTTGTTCGGCGGGTTTGGCGATGACGGTGT
TGCCTGCCGCCAATGCGGAAACGACTTCGCCGGTAAAGATGGCGAGCGGGAAGTTCCACG
GGCTGATGGCGACAATCGCGCCGACGGCTTTTGCGTCTTGAGGCAGGGTATGTTCGGCTT
CGTTTGCGTAGTAGCGGCAGAAATCGACGGCTTCGCGCACTTCGGCAATGGCGTTGTTCA
GCGTTTTGCCTGCTTCGCGCACGGCAAGCATCATCAGTGCTGGGGTGTGCTGCTCCAGCA
AATCGGCAAAACGCCGCAGGCAGGCGGCGCGTTCGGCCGCAGGTGTCGCACTCCATTCGG
GGAACGCGGCAACGGCTGCGCCAACCGCTTCTTGGGCAAGCGCGGCATCGGCAAAGCTGA
CTGTGCCGACGATGTCGTCGTGGTCGGCAGGGTTTTTAATCGGTTGCGCTTCGCCGACAT
CGCGGGCTTTGCCGTTGACGATGGATGCGGCGTGGAAGTCTTGCGCGGCGGCTTTGTTCA
TCTGTTCTTGAAGCTGCTGCAATACGTTTTCGTTGCTCAAGTCCACGCCTTGCGAGTTCA
GACGGCATTTGCCGTACAAATCGCGCGGCAGCGGCAGGGCGTTGTGCAGGTCGATGCCTT
GTTCGGCGATGGTCTCGAACGGGCTGCGGATGAGCGTGTCGATGCTGATGTTTTCATCGA
CGATTTGGTTGACGAAAGACGAGTTCGCGCCGTTTTCCAACAGGCGGCGCACCAAGTAGG
CGAGCAGGGTTTCGTGTGTGCCGACTGGGGCGTACACGCGCACGCGGCGGCCTAAGTTTT
GCGGGCCGACGACTTGGTCGTACAGGGTTTCGCCCATACCGTGCAGGCATTGGTGTTCAA
AATCTTTGCCTTTACCCATTTGGTAGATTGCGCCCAAAGTGTAGGCGTTGTGGGTGGCAA
ATTGCGGGAATACCGCGTCTTGCGCGGAAAGCAGTTTGCGCGCGCAGGCGAGGTAGGAGA
TGTCGGTGTGGACTTTGCCGGTGTAGGTCGGATAGCCGTTCAAGCCGTCCACTTGCGCCC
ATTTGATTTCGCTGTCCCAATACGCGCCTTTGACGAGGCGGATCATTAGTTTTTGGTTGT
TGCGGCGGGCAAGGTCGATCAGGTAGTCGATAACGAACGGACAACGTTTTTGGTAGGCTT
GGACAACGAAACCGATACCTTTGTAGCCAGCCAAGTCAGGGTCTGAAACCAAAGCCTCCA
TCAAATCCAAAGACAGCTCCAGACGGTTGGCTTCTTCGGCATCGATGTTGATACCGATAT
CGTATTTTTACCCAAAAGGAACAGCTCTTTCAGGCGCGGCAACAGTTCGCCCATCACGC
GGCCGTGTTGGGTGCGCCAGTAGCGCGGATGGATGGCCGAAAGTTTCACGGAAATACCGT
TACCTTCGTAAACGCCTTCTCCTGCCGCATCTTTGCCGATGGCGTGCATGGCTTCCACAT
AGTCGCGGTAGTAGCGGTCGGCATCGGCTTGGGTGTAGGCGGCTTCGCCCAACATATCGA
AGGAGAAGCGGTAGCCCATTTTTTCGCGTTCTTTGCCGTTTTGCAGGGCTTCTTCAATGG

TCTGTCCGGTTACGAACTGTTTGCCCAGAAGCCGCATGGCGTAATTTACGCCTTGGCGGA
TGAGCGGTGCGCCGCCTTTGCTGATCAGGCGGCTGAGTGCGGAACTCATTTGTTTGTCGT
TTGTGGCGGTCAGTTTGCCGGTAATCAGCAGGCCCCAGGCGGCAGCATTGACGAAGAGGG
AAGGGCTGTTGTTCAAATGGCTTTTCCAGTTGCCGTCTGAAATCTTGTCGGCAATCAGGC
GGTCGCGCGTGGCGTTGTCGGGCATACCCAGCAGGGCTTCTGCCAGACACATCAGCGCGA
TGCCTTCTTCGCTGGAGAGTGAAAACTCGTGCATCAGCGCATCCACGCCGCCGGCTTTGG
TGCGGCCGGCGCGGACTTGGGTAACCAAACGGCGGGCAAGCTCGGAGGCGGCGTTGCGCT
CTTCGTCGCTCATCTGTGCACGTTGCAACATATCCTGTACGGCTTCGATTTCATTACGGC
GGTAGGCATCGGTTATCGCTTGGCGCAGGGCAGTTTGTGCCGGAAATGCAAAATGAAACA
TTTTTTGGATTCTCCAAAGTTTTTCGGGGGGCAGGCGGCATCGGTGCGGCCTGAATACGG
TAATATCGTAATAAATCCGCAGATGAAATACAAGGCTTCAAATGCCGGCAGGGTAGGTGC
TTCCGTTTCTTTGAAAATGAAACGGGTAAAACACAAATAAGGCCTGTATGCAGGCAAGGT
TTATTTGTGTTTGACCCGGAAACGGGTTCAGACGGCACGAACCGGGATGCCGTGCCGTCT
GAAAGGGGTTTATCGGGTGGCGCGGTAATCTGCGTCGGCTTTTTCAAAGCGTTCTTGGGT
TTCGCGCGAAGGTTCTTTGTTGAACAGGGAAACCAACACGGCAACGATCAAGCAAACAAT
AAAGCCCGGCACGATTTCGTACATCGTCAACAAGCCGCTTTCTCCTGCCGCTTGAGCCGG
TTTTTTCACCCATTCCGCCCATACGACTACGGTTAACGCACCTGCAACCATACCCGACAA
CGCGCCGTAGGCAGTGATGCGTTTCCACAATACGGACAGAATCACAATCGGGCCGAATGC
CGCGCCGAAACCTGCCCACGCGTAAGACACCAGTCCCAATACTTTGCTGTTCGGATCGGA
AGCAATCAGGATGGAAATCACGGCAATCGCCAAGACCATCAGGCGGCCGACCCATACCAA
TTCCGACTGTTGCGCGTTTTTACGCAAAAAGCCTTTGTAGAAGTCTTCGGTAATCGCGCT
GGAGCAAACCAAAAGCTGGCAGGACAGGGTGGACATCACCGCCGCCAAAATCGCGCTCAA
AATAATGCCGGCAATCCAAGGGTTGAACAGCAGGGTGGAAAGCGCGATGAAGATCCGTTC
GTGGTTGCCGCTCATAGAAGAAACTTTGTCGGGATTTGCACCGAAATACGCAATGCCGAA
ATAACCGACCGCTACCGCGCCCGCAAGGCACAACGCCATCCAAGTCATACCGATGCGGCG
TGCGGATACCAGCGATTTCGCGCTTTCGGCCGCCATAAAGCGCGCCAAAATGTGCGGCTG
TCCGAAATAGCCCAAGCCCCATGCGGCGGTGGAAATGATGCCGATGACGGTCGTACCGGC
AAACAGGCTGCCGTATTCTTTGCCCGTGCCTGCGGCGACACTTTGAATCGCGGCAGACAT
CTGTTCCGCGCCGCCCAAGCCCAGATAGACCATCACAGGCCTTAAAATCACCGCCAAAAT
CATCAAAGAAGCCTGCAGCGTATCCGTCCAGCTTACCGCCAAAAAGCCGCCCAAGAAGGT
ATAGGCGATGGTCGCGCCCGCGCCCAGCCACATTGCCTGATTGTAAGTCATACCTTCAAA
CAGGCTTTGGAACAGGGTTGCGCCCGCCACAATGCCCGAGGCGCAATAAATCGTGAAGAA
AAACAGGATAATCAGTGCGGAAACCACTTTCATCAAGTGTCCGCCCGCGCCAAAGCGGTG
GAAGAAATAATCCGGCAGCGTCAGCGCGTTGTTGGCGTATTCGGTATGTACGCGCAGACG
GCCCGCCACCAAAAGCCAGTTGAAATACGCGCCGACCAAGACGCCGATGGCAATCCAAGC
CTCATTCAAACCGCTCAAATAAATCGCGCCCGGCAGACCCATCAAAAGCCAGCCGGACAT
ATCGGACGCGCCTGCCGACATCGCGGTAACAAACGGGCCTAGGCTGCGCCCGCCCAAAAT
ATAATCGTCGAAATTGCGCGTAGAAAAATAGGCGGCAAGCCCGATGAGAAGGACTGCAAC
CAGATACATTGCAAAAGTAATGTACATGGGATTCATGTGCTATTCCTCGTCTAAAACTTC
AGAATTACAGGCTTTGAAATTGCAAGCAACTTGCGCCTGAAATGTTTTTCTAATAAAAGT
ACAACGGAAAATCCGGATACCCGAAAGGGGGATTCGGATAAATTATCTTCAATCACAATA
ACATATGTAATAAAACTATATGAAATTGTAAATAATCCGTTTCAGGATAACCCAATTTCT
GTTGTTTGCAAAGCACTTAATGGCTTAAAAAGCCGAGTTTCAAACGATGCGCGTCGGAAA
AATCATTTAAAACAGCATATTGTTTTGTAGTGTCTTGTAATCGGGCGTTGCGCGGAATAT
GAAATCCGTTTTCAGGCGGCAGGTGTTTTGAGGTGTAATTTAGCAACCGCAAAGGAGGCG
CGGTATGTTTTGCCGATTATCCGCCGCCCGTTTTCAGACGGCATTTTTCCTTATACAATA
GCCGATTGAATTTGATATGTTCAGGAAGGATACAGATTATGTTCGGCAAGCAGCTTTTTG
AGGAAGTCGGCTCGAAAATCAGCCAAACCATCGCCAACAGCCCTGCCAAAGATGTGGAAA
AAAATATTAAGGCGATGCTGGGCGGCGCGTTCAACCGTATGGATCTGGTTACGCGCGAAG
AATTCGACATCCAGCAGCAGGTTTTAATCAAAACCCGTACCAAACTGGCGGCTTTGGAAG
CGCGTTTGGAAAAACTCGAAGCCGCGCAAAATCCCGAACGGGCAGCATTGGAAGCGGCTG
AAGCCGCTGCCGAAGAAGCCGTCGCCGAAATCAGGCAGCAAACCGAAGCCGGCGAATAAG
GTCGTCTGAAATATGTCGCTTGCCTTGGTTTACAGCCGCGCCTTGAGCGGTATGAATGCG
CCGTTGGTCGAAGTGGAAGCCCACCTTGCCAACGGCCTGCCACATTTCAACATCGTCGGA
CTGCCCCATATGGAAGTAAAGGAAAGTCGCGACCGTGTCCGTGCCGCCATTATTCAAAGC
GGTTTTGAATTCCCCGCCAAAAAAATTACCGTCAACCTCGCCCCCGCCGACCTGCCCAAA
GAGTCGGGGCGTTTCGATTTGCCGATTGCAATCGGCATCCTTGCCGCATCGGGGCAGGTT
GCGCCCGAAAAACTGGAGGAATACGAGTTTGCGGGGGAATTGGCACTGTCGGGGCTGTTG
CGCCCCGTGCGTGGCGCGTTGGCGATGGCGTGGCACGGTATGCAGGCAAAACGTGCATTT
GTTTTGCCTGAAGAAAATGCAGGACAAGCCGCCGTCATGCGCGGCATTACCGTTTACGGC
GCGCGCTCTTTGGGCGAAGTCGCCGCCCATTTGAACGGCATCGAACCTTTGGCGCAAACC
GAATGCCAAGTTCCTCAGATGCCGTTTGAACATGGCGGACAACCTGATTTGTGCGATGTG
AAAGGTCAGCACACCGCGCGCCTTGCTTTGGAAATCGCTGCCGCAGGCGGACACAGCCTC
TTGATGATGGGTCCGCCGGGAACGGGCAAGTCTATGCTCTCCCAACGGCTGCCCGGCATC
CTGCCGCCGCTGACCGAAGACGAATTGGTAGAAGTTTGGGCATTGCGTTCGCTCCTGCCC
AACCACCAACAACAACTCGACAGCAACCGTCCTTTCCGCAGTCCGCATCACAGCGCCAGC
GCGGCGGCTATGGTCGGCGGCGGTTCGGATCCGCGTCCGGGCGAAATTTCATTGGCGCAC
CACGGCGTTTTGTTTTTGGACGAGCTGCCCGAGTTTGACCGCAAACTTTTGGAAGTTTTG
CGCGAACCGTTCGAAAACGGCGAAATCCACATTTCCCGCGCGGCGCGCCAAGCCGTCTAT
CCTGCCAAATTCCAACTTGTTGCCGCCATGAACCCCTGCCCGTGCGGTTATCTCGGGCAT
CCCGTCAAACCCTGCCGCTGCACGCCCGAAAGCGTCGCGCGTTACCGCAGCAAGATTTCC
GGGCCGCTGCTCCACCGCATCGATTTGACCATCGAAGTCCCGAGCCTGTCCGCCGCCGAA
CTGATGCAGCAGGAAGCAGGGGAAAGCAGCGCGTCCGTTTTGGAACGCGTTATCGCCGCT
AGAGACAAACAATACGCACGGCAAGGCAAAGTGAATCCCGCCTTGAGTGTCAGTGAACTC
GACACATCCGCCCGCATTCAAAAAGAAGCGCAGGAAGCATTGGGCGGCCTGCTGGAAAAA

CTCTCCCTTTCCGCCCGCAGCTTCCACCGCATTATGCGCGTGGCGCGTACATTGGCGGAT
TTGGCGGGCGACGAAGAAGTCGGCAGAAGCCACGTCATGAAAGCCATAGGTTTCCGTCGT
GCTTTATAGGAATGGGAATGGAAGCAGGTTTTGCCCAAATATGGCGATATTGTTAGAATA
TCCGCCCGTAAGCAAACGGCGTTAATGCCGTCTGAAACACATTAAGGTATGTTTATGAAC
AAATTTTCCCAATCCGGAAAAGGTCTGTCCGGTTTTTTCTTCGGTTTGATACTGGCGACG
GTCATTATTGCCGGTATTTTGTTTTATCTGAACCAGAGCGGTCAAAATGCGTTCAAAATC
CCGGCTTCGTCGAAGCAGCCTGCAGAAACGGAAATCCTGAAACCGAAAAACCAGCCTAAG
GAAGACATCCAACCTGAACCGGCCGATCAAAACGCCTTGTCCGAACCGGATGCTGCGACA
GAGGCAGAGCAGTCGGATGCGGAAAAAGCTGCCGACAAGCAGCCCGTTGCCGATAAAGCC
GACGAGGTTGAAGAAAAGGCGGGCGAGCCGGAACGGGAAGAGCCGGACGGACAGGCAGTG
CGTAAGAAAGCGCTGACGGAAGAGCGTGAACAAACCGTCAGGGAAAAAGCGCAGAAGAAA
GATGCCGAAACGGTTAAAAAACAAGCGGTAAAACCGTCTAAAGAAACAGAGAAAAAAGCT
TCAAAAGAAGAGAAAAAGGCGGCGAAGGAAAAAGTTGCACCCAAACCAACCCCGGAACAA
ATCCTCAACAGCGGCAGCATCGAAAAAGCGCGCAGTGCCGCCGCCAAAGAAGTGCAGAAA
ATGAAAACGTCCGACAAGGCGGAAGCAACGCATTATCTGCAAATGGGCGCGTATGCCGAC
CGTCAGAGCGCGGAAGGGCAGCGTGCCAAACTGGCAATCTTGGGCATATCTTCCAAGGTG
GTCGGTTATCAGGCGGGACATAAAACGCTTTACCGGGTGCAAAGCGGCAATATGTCTGCC
GATGCGGTGAAAAAAATGCAGGACGAGTTGAAAAAACATGAAGTCGCCAGCCTGATCCGT
TCTATCGAAAGCAAATAATTATGAAGCTCAAACATCTGTTGCCGCTGCTGCTGTCGGCAG
TGTTGTCCGCGCAGGCATATGCCCTGACGGAAGGGGAAGACTATCTTGTGTTGGATAAAC
CCATTCCTCAAGAACAGTCGGGTAAAATTGAGGTTTTGGAATTTTTCGGCTATTTCTGCG
TACATTGCCATCATTTCGATCCTTTGTTATTGAAACTGGGCAAGGCATTGCCGTCTGATG
CCTATTTGAGGACGGAGCACGTGGTCTGGCAGCCTGAAATGCTCGGTTTGGCTAGGATGG
CGGCTGCCGTCAATTTGTCGGGTTTGAAATATCAGGCAAACCCTGCTGTGTTTAAAGCAG
TTTACGAACAAAAAATCCGCTTGGAAAACAGGTCGGTTGCCGGAAAATGGGCTTTGTCTC
AAAAAGGCTTTGACGGCAAAAAACTGATGCGCGCCTATGATTCCCCCGAAGCTGCCGCCG
CCGCATTAAAAATGCAGAAACTGACGGAACAATACCGCATCGACAGCACGCCGACCGTTA
TTGTCGGCGGAAAATACCGCGTTATCTTCAATAACGGCTTTGACGGCGGCGTTCATACGA
TTAAAGAATTGGTTGCCAAAGTCAGGGAAGAACGCAAGCGTCAGACCCCTGCTGTACAGA
AATAGCCGAACTCCCGTATCCGAAAGAAGCGCAAGCAATGGATTTTCTGATTGTCCTGAA
AGCCCTGATGATGGGCTTGGTAGAAGGTTTTACCGAATTTTTACCGATTTCCAGCACCGG
ACATTTGATTGTGTTCGGCAATCTGATTGGTTTTCACAGCAATCACAAGGTTTTTGAAAT
TGCCATCCAGCTCGGTGCAGTTTTGGCGGTAGTGTTTGAATACCGGCAACGTTTCAGCAA
TGTGTTGCACGGCTTGGGAAAAGACCGGAAAGCCAACCGCTTCGTCCTTAATCTTGCCAT
TGCTTTTATACCTGCCGCCGTGATGGGGCTGTTCTTCGGCAAACAAATCAAAGAGTATCT
GTTTAACCCCTTGAGTGTTGCAGTCATGCTGGTTTTGGGCGGTTTTTTTATTTTGTGGGT
GGAGAAACGCCAAAGCCGAGCAGAGCCTAAAATTGCCGATGTTGATGCATTGCGTCCGAT
TGATGCCTTGATGATCGGCGTTGCCCAAGTGTTTGCACTGGTTCCGGGTACGTCCCGTTC
GGGCAGTACGATTATGGGCGGGATGCTTTGGGGCATCGAACGGAAAACTGCGACAGAATT
CTCGTTTTTCTTGGCTGTGCCGATGATGGTTGCCGCAACGGCTTATGATGTCCTGAAACA
TTACCGATTTTTCACCCTGCATGATGTCGGTTTGATTCTGATAGGCTTTATTGCTGCCTT
TGTTTCAGGCTTGGTAGCGGTAAAAGCGTTGCTGAGGTTTGTTTCCAAGAAAAATTATAT
TCCTTTTGCCTATTACCGCATTGTTTTTGGTATTGCCATCATTATATTGTGGCTGTCAGG
CTGGATAAGTTGGGAATGAAACCATAAACCCGACCTGAAGACATTATTCGGGTCGGGTTT
GTCTGGCGGGCTGATATAGTGAATTAACAAAAATCAGGACAAGGCGACGAAGCCGCAGAT
AGTACGGCAAGGCGAGCCAACGCTGTACCGGTTTAAATTTAATTCACTATAAAATCAGGA
CAGGCGGGGCGATAGGTTTAAAGTCGATTGCCTGTTTTGAAGGCAGTGGTTTATTCTTTA
TTTGCTGGCAATCAGGCAATAAAAAAGCACATACCTTTTTACGGTCTGTGCTTTTTTATC
TGGTGGAGGTAAGCGGGATCGAACCGCTGACCTCTTGCATGCCATGCAAGCGCTCTACCA
ACTGAGCTATACCCCCGAAAATTTGGTGGCGAATCAGGGACTCGAACCCCGGACACAAGG
ATTATGATTCCTCTGCTCTAACCGACTGAGCTAATTCGCCGTTTCGTGAAGACGCTATTA
TATGTTTTTCTGTTTTTTTGACAAGCCGTATTTTTTAATTTTGAATTAGTTGACTGTTTT
TAAATGTTAAAAAGTTTATGCCGTCTGAAGCGGATTCAGGCGGCATGAGGGTTAGAGTTT
GTGGCAGATGTCGCCGAAGCGGAATCCTGCCCAGTCGATGCCGATATTTTTTCCGAATGC
GATGACTTTAAACAGTTCGCCCATTTCATGCTGGTCAATCAGTTTCTGAACGGCAGCAGC
TTCACAGATGTAGGCTGCCGAATCCGTTTTCCCCGTCTGTGCCAATAGCTCGGTAATGCC
CAAGTTCAATAAGAAATGGGATTGGGGAAGGTAACCTATCAAATCTAATCCGGCATCCGT
CCCTGCTTGTGCAATGTCGGTAAAGTTGACATGTGCGGTCAGGTCGGCCAATCCGATGAA
GTCAAAAGGATTGTGGATAATGTGATGTCGGTAGTGTCCGATCAGAGTACCTTGATTGCG
TTGAGGGTGGTAATACTGCGCTGCATCAAAACCGTAGTCGATGAATATCATGCAGCCGTG
TTCGAGTCTTGAGGCAAGGGTGCGGATAAAGGCATATTGTTGCGGATGTAGTTCGCTGGT
ATAGGGATAATCTGTTTGAGGAAAATAGAGGGAAGCCAAGGCAGATAGCTGCAAGTCGTG
CAGCGGTCGTGCCGAATAGGTAAAACGGTCATTATCTAGGCAAACGCCGACATGCTCGAA
TGAGCCGCCTTCATTTTTACGGACGATTTCGACAGGCATGGCATCGAGTACTTCGTTGCC
GATGATGATGCCGTCAAACGCTTCGGGAAGTGCGGTCAAGTGGACAACTTTTTGAGATGC
TTCCGGTGCGCGTGCTTGAATCAGGTTTTTCTGACGTGCTGCCAGCTCCGGCGATATTTC
AATAATATAGTAACGGCTGATGCCGTCCGAAATGCTGCCCAACAAATCGGCGGCAAGCTG
TCCGGTTCCCGCGCCGAATTCATAGATATTGCCCGCCGTTTGGGATAGAAGTTCTTGAAG
TTGGCGTGCCAGTGTCTGTGCAAACAGAGAGGTGAGGGTCGGTGCGGTAATAAAATCCCC
GGTATTGCCGATTTTATGGCTGCCGCCGGTGTAGTAGCCGTATTGCGGAGCGTATAAAAC
CAATTCCATAAAACGTGAAAATGGAATCCAGTTGCCGTGTTTGCCGATTTTTTCGGCAAT
GAGGGTTTGCAGTTTGAGCGAGAATTGCCGTGCTTCGGGAGAGGGGAGGGGCATGATAAG
TGTTAGCTTGTGTAAATTTATTGGATTTCCCGACATATTACACGTTGGTACGGGTGCTGT
CATGGCTTTATCTTAATACTATATATTGTGTTTATATTATTAAATTAATCATATATAGTT
GTTTATTGGTTCGATTATTCTGTACCGCACCCGCCGTGCCGTTGTCGTCATTTTTTATCT

TATTGTTTTTAAAAGGAATAAAAATTTCAGATATGTTAATGAGTTTTCATGCCCTGATTT
GACCGAGTGTTTAAAATTTCTTATAGTGTCGATTGGTGGGGAATTGTGGGGCAAAGTGTC
TCTTTTACCCTTGTGATTTTGATTTCGGCTTGGGACATGTCATGTTCGGCGGCGCACACG
AATTAAGCATCGACAGTAAGGGGCGGTTGGCTGTTCCTGCCAAATTCCGTGACATTCTGT
CGCGCCTCTATACGCCTGCCGTAGTGGTAACGCTCGAGTCGAAACACAAGCTGTTGATGT
ACCCTGTTGCGGAGTGGGAAAAGGTTGCGGCGCAACTTTTAAACTTAAAAGTGGCGGATA
ACCCTGTTTTGCGGCGGTTTCAAAATCTTTTGCTGCATAACGCGGAAATTTTGGAATGGG
ACAGCGCCGGCCGGGTGCTGGTTTCTGCCGGACTGAGGAAGAGGGTGGATTTCGACCGTG
AAGTCGTTTTGGTCGGTCGTGCCAACCGTTTGGAGCTTTGGGGTCGCGAGCAGTGGGAGG
CTGAGATGGTTCAGGCTTTGGATGACGATCCTGACGAACTTGCCTTCCAGTTGAGTCAGA
CGGATTTGCAATTGTGAGTGGAGCAGAAAGTTACCGGCATATCACGGTCTTGCTGAATGA
GGCGGTGGATGCGCTTGCCGTGCGCGAAGACGGTGTCTATGTGGACGGTACGTTCGGCAG
GGGAGGGCATTCCCGGCTGATTTTGTCGCGTTTGGGCGATGCGGGGCGGTTGATTGTTTT
CGACAAAGACCCGCAGGCGATTGCTGTGGCAGAAGAGCTGGCGCGTTCGGACAAACGGGT
CGGTGTCGTGCATGGCGGTTTTGCTTCGTTTCAGACGGCATTGGACGGTTTGGGTATCGG
CAAGGTGGACGGTGCGCTGTTTGATTTGGGGATTTCGTCCCCGCAAATCGATGACGGCAG
CCGCGGTTTCAGCTTCCGTTTCGATGCCCCTTTGGATATGCGTATGGATACGACGCGCGG
TATGTCTGCCGCAGAGTGGATAGCGGTTGCGTCGGAACAGGATTTGCACGAGGTAATCAA
GAATTATGGTGAAGAGCGGTTTAGCCGCCGGATTGCGCGCGCCATTGTTGCGCAACGGGC
GGAAAGTCCAATCGATACAACCCGCAAGCTGGCGCAGATCGTGGCACAAAACGTCCGTAC
TCGCGAGCGGGGGCAGGATCCTGCGACGCGCACCTTCCAGGCGGTCCGCATCTTTATTAA
CCGCGAGCTTGAAGAAGTAGGGGCAGTATTGCCGCAGGTCATGTGTCGTCTGAAAGAGGG
CGGACGTTTGGCGGTCATTGCTTTCCATTCGTTGGAAGATCGCATTGTGAAGCAGTTTGT
CAAAAAATATTCGCAACACGCGCCCCTGCCGCGCTGGGCGGCGGTCAGGGAAGCGGATTT
GCCCGAGCTGCCCCTGAAAATCGTGGGCAGGGCATTAAAGCCGGGTGAGGCGGAAATTGC
CGCCAATCCGAGGGCGAGAAGTGCGGTTTTGCGTGTGGCGGAGCGGACTGCCGGTCCGAT
ACCGGAACAATCACAGAGAAAAACGTCTGAATGGCAATGAACAAATTGAATTTGCTTCTG
CTGCTTGCGGTGTGCGTTTCCGCTTTTTCCGTTGTGATGCAGCAAAACCAGTACAGGCTC
AATTTCACAGCTTTGGATAAGGCGAAAAAACAGGAAATCGCCTTGGAGCAGGATTATGCG
CAAATGAGGCTGCAACAGGCGCGTTTGGCGAACCACGAAGCGATCAGGGCGGCGGCAGAA
AAACAAAACCTCCATCCGCCGGTTTCGGGCAATACCTTTATGGTGGAGCATCAAAGATAG
AAGCAGCCTGTGTGCCGGAATCGGATTCCTGCGTCAGGATAATAATAACGAGAAGTAAAA
ATGTTGATTAAGAGCGAATATAAGCCTCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG
CCGATGACCAGTAACGGACGGATCAGCTTCGTCCTGATGGCAATAGCGGTCTTGTTTGCC
GGTCTGATTGCTCGCGGACTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG
GGCGACAACCGGATTGTGCGGACTCAAACATTGCCGGCTACACGCGGTACGGTTTCGGAC
CGGAACGGTGCGGTTTTGGCGTTGAGTGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA
GAGATGAAGGAAATGCCGTCTGCCGCACAATTGGAACGCCTGTCCGAGCTTGTCGATGTG
CCGGTTGATGTTTTGAGGAACAAGCTCGAACAGAAAGGCAAGTCGTTTATCTGGATTAAG
CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA
TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA
TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG
CATGGCGAAGACGGCGCGGAAGTCGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC
TTGGACTCCCCGCGCAATAAAGCCCCGAAAAACGGCAAAGACATCATCCTTTCCCTCGAT
CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA
AAAGCCGGAACGGTGGTGGTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT
ACGCCCGCCTACGATCCCAACAGGCCCGGCCGGGCAGACAGCGAACAGCGGCGCAACCGT
GCCGTAACCGATATGATCGAACCCGGTTCGGCAATCAAACCGTTTGTGATTGCGAAGGCA
TTGGATGCGGGCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA
CCGTCTCCCGTGCGCGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATCATGCAG
AAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGTGCCGAAGAAATGTAT
GACTTCTATCATGAGTTGGGCATCGGTGTGCGTATGCACTCGGGCTTTCCGGGCGAAACT
GCAGGTTTGTTGAGAAATTGGCGCAGGTGGCGGCCTATCGAACAGGCGACGATGTCTTTC
GGTTACGGCCTGCAATTGAGCCTGCTGCAATTGGCGCGCGCCTATACCGCACTGACGCAC
GACGGCGTTTTACTGCCGGTCAGCTTTGAAAAACAGGCGGTTGCGCCGCAAGGCAAACGC
ATATTCAAAGAATCGACCGCGCGCGAGGTACGCAATCTGATGGTTTCCGTAACCGAGCCG
GGCGGCACCGGTACGGCGGGTGCGGTGGACGGTTTCGATGTCGGCGCGAAAACCGGCACG
GCGCGCAAGTTCGTCAACGGGCGTTATGCCGACAACAAACACATCGCTACCTTTATCGGT
TTTGCCCCCGCCAAAAATCCCCGTGTGATTGTGGCGGTAACCATTGACGAACCGACTGCC
CACGGTTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCAAAAAAATTATGGGCGGCAGC
CTGAACATCTTGGGCATTTCCCCGACCAAGCCACTGACCGCCGCAGCCGTCAAAACACCG
TCTTAATCCGAGTATCAACGAGATTGTTTTATGTTCAGCAAGTTAACCCCTTTGGCTGAA
ACCGGCATCCCGACTCTGTCGTGTGCAAACGCGGCAGGGCGTTTGTTGCATTCAGACAGC
CGCCAAATCAAACAAGGCGATATTTTCGTTGCCTGTCCGGGCGAATATGCCGACGGACGC
AGTTATATCCCCGCCGCCGTTGCCAACGGCGCGGCTTTTGTTTTTTGGGACGACGACGGC
AAATTTGCGTGGAATCCCGAATGGAAAGTCCCCAATCAAGGCATCAAAGATTTGAAACAC
CGTGCCGGCATATTGGCGGCGCAAGTTTACGGCAACGTTTCAGACGGCCTCAAAGTTTGG
GGCGTAGCCGGAACCAACGGCAAAACCTCCATCACACAATGGCTGGCGCAAGCTGCCGAT
TTGTTGGGCGAAAAAACCGCCATTGTCGGCACGGTCGGCAACGGCTTTTGGGGTGCATTG
GAAGAAACCACGCATACCACACCCGCCCCCGTCGATGTCCAAACCCTGCTCTACCGTTTC
CGTCAACAAGGCGCAACAGTCGCCGCGATGGAAGTCTCCAGCCACGGGCTTGACCAGTCG
CGCGTCAACGGCGTGTCATTCCGCAGCGCAATCTTTACCAACCTCACCGGCGACCACCTC
GACTACCACGGCACGATGGAAGCCTACGGTGCCATCAAGTCGCGCCTGTTTTACTGGCAC
GGCTTGAAACACGCAGTCATCAACGTGGATGACGAATACGGCGCGGAACTCGTAGGTCGT
CTGAAAAAAGACTGTCCCGATTTGGCCGTTTACAGCTATGGTTTCAGCGAACACGCCGAC

ATCCGCATTACCGACTTTACCGCCTCTTCAGACGGCATAGCAGCCGTATTCCAAACCCCG
TGGGGCGAAGGGAAATGCCGCACGCGCCTGCTCGGACGGTTCAACGCGCAAAACCTCGCC
GCCTGCATCGCCTTGCTGTGCGCCAACGGCTATCCGCTTGATAAGGTATTGGATGTGCTG
GCAAAAATCCGTCCCGCTTCAGGGCGCATGGACTGCATCATGAACAGCGGCAAGCCCTTG
GTCGTTGTCGATTATGCCCACACGCCCGACGCATTGGAAAAAGCACTCGCCACCTTGCAG
GAAATCAAACCGCAGGGTGCGGCTTTATGGTGCGTATTCGGTTGCGGCGGCAACCGCGAT
CGCGGCAAACGCCCGCTGATGGGCGCGGCAGCCGTACAGGGCGCGGATAAAGTCGTCGTC
ACCAGCGACAACCCGCGTTTGGAAAATCCGCACGACATCATCAACGACATCCTGCCTGCC
GTTCCCGCGCCCGAATGCGTCGAAGCCGACCGTGCCGCCGCCGTCCGTTATGCGGTTGAA
CAAGCCGCCGCAAACGACATCATCCTGATTGCCGGCAAAGGGCATGAAAACTATCAGGAT
GTACAAGGCGTGAAGCACCGTTTTTCCGATCTTGAAATCGTCGGACAGGCTTTGTTAACT
CGTAAATAATGGGATATTCGGACGGCATCGTATGAAACAATCCGCCCGAATAAAAAATAT
GAATCAGACATTAAAAAATACATTGGGCATTTGCGCGCTTTTAGCCTTTTGTTTTGGCGC
GGCCATCGCATCAGGTTATCACTTGGAATATGAATACGGCTACCGTTATTCTGCCGTGGG
TGCTTTGGCTTCGGTTGTATTTTTATTATTATTGGCACGCGGTTTCCCGCGCGTTTCTTC
AGTTGTTTTACTGATTTACGTCGGCACAACCGCCCTATATTTGCCGGTCGGCTGGCTGTA
TGGTGCGCCGTCTTATCAGATAGTCGGTTCGATATTGGAAAGCAATCCTGCCGAGGCGCG
TGAATTTGTCGGCAATCTTCCCGGGTCGCTTTATTTTGTGCAGGCATTATTTTTCATTTT
TGGCTTGACAGTTTGGAAATATTGTGTATCGGGGGGGGTATTTGCTGACGTAAAAAACT
ATAAACGCCGCAGCAAAATATGGCTGACTATATTATTGACTTTGATTTTGTCCTGCGCGG
TGATGGATAAAATCGCCAGCGATAAAGATTTGCGAGAACCTGATGCCGGCCTGTTGTTGA
ATATTTTCGACCTGTATTACGATTTGGCTTCCGCGCCGGCACAATATGCCGCCAAGCGCG
CCCACATTTTGGAAGCAGCAAAAAAAGCGTCAACATGGCATATCCGTCATGTTGCGCCCA
AGTATAAAAATTATGTTGTGGTTATCGGTGAGAGCGCGCGTTCGGATTATATGAATGTTT
ACGGTTTCCCATTGCCCGATACGCCTTTTTTGAGTCAGACCAAAGGGCTGTTGATAAACG
GTTACCAATCGACCGCCCACGCGACGAATCTTTCGCTGCCGCAGACTTTGGGGCTGCCGG
GAGAACCGAACAATAACATCGTCAGCTTGGCGAAGCAGGCGGGTTTTCGGACGGCGTGGC
TGTCTAATCAAGGAATGTTGGGGCATTTTGCCAACGAAATTTCCACCTATGCCCTACGCA
GCGATTATCCGTGGTTTACCCAAAGGGGTGATTATGGCAAAAGCGCGGGGTTGAGCGACC
GCCTTTTGTTGCCGGCGTTCAAACGGGTTTTGATAGGAAATGCAGGCACGAAGCCTCGGC
TGATTGTGATGCACCTGATGGGTTCGCACAGTGATTTTTGCACACGTTTGGATAAGGATG
CGCGGCGGTTTCAGTATCAAACTGAAAAAATATCCTGCTATGTTTCCACCATCGCGCAAA
CCGATAAATTTTTAGAAGATACAGTTAAGATATTGAATGAAAATAAAGAAAGCTGGTCTT
TGGTTTACTTTTCCGACCACGGTTTGATGCATGTCGGTAAAGGCGGCGAGCGAACGTTGA
CACATGGTGCGTGGAAGCGTCAAAGCTACGGCGTGCCGCTGGTTAAAATTTCGTCCGATG
ACACGCGGCGCGAAATGATTAAAGTGAGGCGCAGCGCGTTTAATTTTTTACGCGGATTCG
GCAGTTGGACGGGTATCGAAACCGACGAGTTGCCCGATGACGGCTATGATTTTTGGGGGA
ATGTTCCCGATGTGCAGGGCGAAGGCAATAACCTTGCCTTTATCGACGGACTGCCCGACG
ACCCCGCGCCGTGGTATGCGGGAAAAGGCAAATCGACTAAAAATACGTCTAAAAAATGAT
ACGTACAGAAAAAATGCCGAATGAGAATGGGAAAATAATCTGTGTTTTACCACAGCAAAA
CAGGCGATAAAAAAATCAGCCGCTACCGATGTGTCCGCCGCCCGAATATTAACGAAAGTA
AATATGAAACCACTGGACCTAAATTTCATCTGCCAAGCCCTCAAGCTTCCGATGCCGTCT
GAAAGCAAACCCGTGTCGCGCATCGTAACCGACAGCCGCGACATCCGCGCGGGCGATGTG
TTTTTCGCATTGGCGGGCGAGCGGTTTGACGCGCATGATTTTGTTGAAGACGTATTGGCT
GCTGGTGCGGCGGCGGTTGTGGTTTCGCGCGAAGATTGTGCTGCAATGGATGGCGCGTTG
AAAGTCGATGACACGCTTGCCGCATTGCAAACGCTGGCAAAGGCGTGGCGTGAAAATGTG
AATCCGTTTGTGTTCGGCATTACCGGTTCGGGCGGCAAGACGACGGTGAAGGAAATGCTG
GCTGCGGTATTGCGCCGCCGTTTCGGCGATGATGCCGTGTTGGCGACGGCAGGCAACTTC
AACAACCATATCGGATTGCCGCTGACTTTGTTGAAGTTAAACGAAAAACACCGCTATGCC
GTGATTGAAATGGGCATGAACCATTTCGGCGAACTGGCGGTTTTAACGCAAATCGCCAAA
CCAAATGCCGCATTGGTCAACAACGCCATGCGCGCCCATGTCGGCTGCGGTTTCGACGGA
GTGGGCGATATTGCCAAAGCGAAAAGCGAGATTTACCAAGGTTTATGTTCAGACGGCATT
GCACTGATTCCTCAAGAAGATGCCAATATGGCTGTCTTCAAAACGGCAACGCTTAATTTG
AATACGCGCACTTTCGGCATCGATAGCGGCGATGTTCACGCGGAAAATATTGTGCTGAAA
CCGTTGTCGTGCGAATTTGATTTGGTGTGCGGCGATGAGCGCGCCGCCGTGGTGCTGCCT
GTTCCCGGCCGCCACAATGTCCACAACGCCGCCGCTGCCGCCGCGCTGGCTTTGGCTGCG
GGTTTGAGTTTGAACGATGTGGCGGAAGGTTTGAAAGGCTTCAGCAATATCAAAGGCCGT
CTGAACGTCAAATCCGGAATCAAGGGCGCAACCCTGATTGACGATACTTATAATGCGAAC
CCTGACAGCATGAAAGCTGCGATTGACGTGTTGGCGCGTATGCCTGCGCCGCGTATTTTC
GTGATGGGCGATATGGGCGAACTGGGCGAACTGGGCGAGGACGAAGCCGCCGCTATGCAC
GCCGAAGTCGGCGCGTATGCCCGCGACCAAGGCATCGAAGCGGCTTATTTTGTCGGCGAC
AACAGCGTCGAAGCGGCGGAAAAATTTGGCGCGGACGGTTTGTGGTTCGCCGCCAAAGAC
CCGTTGATTCAAGTGTTGCGCCACGATTTGCCCGAACGCGCCACCGTGTTGGTGAAAGGT
TCGCGCTTTATGCAGATGGAAGAAGTGGTCGAGGCATTGGAGGATAAGTGAAAATGAAAA
GCCGACGTTTTTTTAAAGCCTTATTGCTGATTGCCGCGCTGGTCGGCGCGTTTTATGCCG
GAATGCGGACGCAGGCGTATCTTTATGAAGATTTATGTTTAGACTTGGGCGGCGGTAAAA
ATCCGGGGAGTTACCCAATTTGCGTGATTGAGAAAGTCCCTGCACGTTAATCTGCAAAAG
CCGTCCGAAACCTTGCCGGGCGGCAAGCCAACCTCAAACGGGCGCAGGCCCGATGTATAG
TGGATTAACAAAAATCAGGACAAGGCGACGAAGCCGCAGACAGTACAAATAGTACGGAAC
CGATTCACTTGGTGCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCTAAGGCGAGGCAA
CGCCGTACTGGTTTTTGTTAATCCACTATAACGACAAAACAAAAAAAGGAAGCCCCATGT
TTTTATGGCTCGCACATTTCAGCAACTGGTTAACCGGTCTGAATATTTTTCAATACACCA
CATTCCGCGCCGTCATGGCGGCGTTGACCGCCTTAGCGTTTTCCCTGATGTTCGGCCCGT
GGACGATACGCAGGCTGACCGCGCTCAAATGCGGGCAGGCAGTGCGTACCGACGGTCCGC
AAACCCACCTCGTCAAAAACGGCACGCCGACGATGGGCGGTTCGCTGATTCTGACCGCCA

TTACCGTGTCCACCCTGTTGTGGGGCAACTGGGCAAACCCGTATATCTGGATTCTCTTGG
GCGTATTGCTCGCCACGGGCGCACTCGGTTTTTACGACGACTGGCGCAAAGTCGTCTATA
AAGACCCCAACGGCGTGTCCGCCAAATTCAAAATGGTGTGGCAGTCAAGCGTTGCCATTA
TCGCCAGTTTGGCATTGTTTTACCTTGCCGCCAATTCCGCCAACAATATTTTGATTGTCC
CGTTCTTCAAACAAATCGCCCTGCCGCTGGGCGTGGTCGGCTTTTTGGTGTTGTCTTACC
TGACCATCGTCGGCACATCCAATGCCGTCAACCTCACCGACGGCTTGGACGGCCTTGCGA
CCTTCCCCGTCGTCCTCGTTGCCGCCGGCCTCGCCATCTTCGCCTATGCCAGCGGCCACT
CACAATTTGCCCAATACCTGCAATTACCTTACGTTGCCGGCGCAAACGAAGTGGTGATTT
TCTGTACCGCCATGTGCGGCGCGTGCCTCGGTTTCTTGTGGTTTAACGCCTATCCCGCGC
AAGTCTTTATGGGCGATGTCGGTGCATTGGCATTGGGTGCCGCGCTCGGTACCGTCGCCG
TTATCGTCCGCCAAGAGTTTGTCCTCGTCATTATGGGCGGATTATTTGTCGTAGAAGCCG
TATCCGTTATGCTTCAGGTTGGCTGGTATAAGAAAACCAAAAAACGCATCTTCCTGATGG
CGCCCATCCATCACCACTACGAACAAAAAGGCTGGAAAGAAACCCAAGTCGTCGTCCGCT
TTTGGATTATTACCATCGTCTTGGTGTTGATCGGTTTGAGTACCCTCAAAATCCGCTGAA
CCTATGCCGTCTGAACATCTTTCAGACGGCATTTGAACGCGCAATAAACCTGCGGCGACA
ATCCGCCCAGCCCTATCGTTAACGGTGCCTGAAACCCGCCTTATACTAAAACAGAAGTAA
AACCATGAAACAGACAGTCAAATGGCTTGCCGCCGCCCTGATTGCCTTGGGCTTGAACCG
AGCGGTGTGGGCGGATGACGTATCGGATTTTCGGGAAAACTTGCAGGCGGCAGCACAGGG
AAATGCACCAGCCCAATACAATTTGGGCGCAATGTATTACAAAGGACGCGGCGTGCGCCG
GGATGATGCTGAAGCGGTCAGATGGTATCGGCAGGCGGCGGAACAGGGGTTAGCCCAAGC
CCAATACAATTTGGGCTGGATGTATGCCAACGGGCGCGGCGTGCGCCAAGATGATACCGA
AGCGGTCAGATGGTATCGGCAGGCGGCAGCGCAGGGGGTTGTCCAAGCCCAATACAATTT
GGGCGTGATATATGCCGAAGGACGTGGAGTGCGCCAAGACGATGTCGAAGCGGTCAGATG
GTTTCGGCAGGCGGCAGCGCAGGGGGTAGCCCAAGCCCAAAACAATTTGGGCGTGATGTA
TGCCGAAAGACGCGGCGTCCGCCAAGACCGCGCCCTTGCACAAGAATGGTTTGGCAAGGC
TTGTCAAAACGGAGACCAAGACGGCTGCGACAATGACCAACGCCTGAAGGCGGGTTATTG
AACAGCTCGCGATGCCGTCTGAAAGCGGCTTGGGCAGGGGCGGACATCTCCTGCTCAATA
TGATTTGTTTTAGGACAAACCAAAATGACTTTTCAAAACAAAAAAATCCTCGTCGCCGGA
CTCGGCGGTACGGGTATTTCCATGATTGCCTACCTGCGCAAAAACGGCGCGGAGGTTGCT
GCGTATGATGCGGAGCTGAAGCCGGAACGCGTGTCGCAAATCGGTAAGATGTTTGACGGG
TTGGTGTTTTACACGGGCCGTCTGAAAGATCCGCTGGACAACGGTTTCGATATTCTGGCT
CTCAGTCCCGGCATCAGCGAGCGGCAGCCGGATATTGAGGCGTTCAAGCAAAACGGCGGA
CGCGTGTTGGGCGACATCGAATTGCTGGCGGACATTGTGAACCGCCGGGACGACAAGGTA
ATTGCGATTACCGGCAGCAACGGCAAAACCACGGTAACGAGCCTGGTCGGCTATCTCTGT
ATCAAGTGCGGGCTGGATACCGTTATCGCGGGCAATATCGGCACGCCGGTTTTGGAGGCG
GAATGGCAGCGCGAAGGCAAAAAGGCGGACGTGTGGGTGTTGGAGCTTTCCAGCTTCCAA
CTGGAAAACACCGAAAGCCTGCGTCCCACTGCGGCGACGGTGCTGAACATTTCCGAAGAC
CATCTCGACCGCTACGACGACTTGCTCGACTATGCGCATACCAAACCCAAGATTTTCCGT
GGCGACGGCGTGCAGGTTTTGAATGCGGACGATGCGTTCTGCCGCGCGATGAAGCGTGCC
GGGCGCGAGGTAAAATGGTTTTCGTTGGAACACGAAGCTGATTTCTGGTTGGAACGCGAG
ACAGGCCGCCTGAAACAAGGCAATGAAGATTTGATTGTCACGCAAGACATTCCGTTGCAA
GGTCTGCACAACGCCGCTAACGTCATGGCTGCCGTGGCTTTGTGTGAGGCCATCGGTTTG
TCGCGCGAAGCATTGCTCGAACACGTCAAAACCTTCCAAGGCCTGCCGCACCGCGTGGAA
AAAATCGGCGAGAAAAACGGCGTGGTCTTTATCGACGACAGCAAACGCACGAATGTCGGC
GCGACTGCCGCCGCGATTGCCGGTTTGCAAAATCCGCTCTTCGTGATTTTGGGCGGCATG
GGTAAAGGGCAGGACTTCACGCCCCTGCGCGATGCACTGGTAGGCAAGGCAAAAGGCGTG
TTCTTGATTGGTGTCGATGCGCCGCAAATCCGCCGCGATTTGGACGGCTGCGGCTTGAAT
ATGACCGACTGCGCCACTTTGGGAGAAGCCGTTCAGACGGCATATGCCCAAGCCGAAGCA
GGCGATATTGTGTTGCTCAGCCCCGCCTGCGCGAGCTTTGATATGTTCAAAGGCTACGCG
CACCGTTCGGAAGTGTTTATCGAAGCGTTTAAGGCTTTGTCATGCCGTCTGAAATGCAAA
CGCCGTCATTGTTGGGCGGCAAGTAAAGATTTAGAATACCGATTTGGGATGTATCGTATG
TTCGGACGGCATTGTCTGCCGTCTGAAATTTTTGCCCTTTGCGGCAGGTGCAAACAGACT
GGCAGGTGGTTTTTTTGAAGATTTCGGAAGTATTGGTAAAAGTGGGCGACGGTGTCCACA
CTCTGCTGCTCGACAGGCCGATTGTGCGCGACGGCAGGAAATTCGACGCGCCGCTTTTGT
GGATGGTGGTGCTGATGACGGCGTTCAGCCTGCTGATGATTTATTCGGCTTCTGTGTATT
TGGCATCAAAAGAAGGCGGCGATCAGTTTTTCTATTTGACCAGACAGGCGGGGTTCGTCG
TTGCCGGCTTGATAGCGAGCGGTTTGTTATGGTTTCTTTGCAGGATGAGGACATGGCGGC
GGCTTGTGCCGTGGATTTTTGCCCTATCCGGCCTGTTGCTGGTAGTCGTATTGATTGCCG
GGCGCGAAATCAATGGCGCGACCCGTTGGATACCTTTGGGTCCGTTGAATTTCCAGCCGA
CCGAGCTGTTCAAGCTGGCGGTCATCCTTTATTTGGCAAGCCTGTTCACGCGCCGTGAAG
AAGTGTTGCGCAGCATGGAAAGTTTGGGTTGGCAGTCGATTTGGCGGGGGACGGCCAATC
TGATCATGTCCGCCACCAATCCCCAGGCACGTCGTGAAACATTAGAAATGTACGGCCGTT
TCCGGGCGATCATCCTGCCGATTATGCTGGTGGCGTTCGGTTTGGTGCTGATAATGGTAC
AGCCGGATTTCGGTTCGTTTGTCGTCATTACCGTCATTGCCGTTGGAATGCTGTTTTTGC
CAGGATTGCCGTGGAAATATTTTTTCGTCCTGGTAGGCAGCGTCTTGGGCGGGATGGTGC
TGATGATTACCGCCGCTCCCTACCGTGTGCAGCGGGTAGTGGCATTTTTGGACCCGTGGA
AAGACCCGCAGGGTGCCGGCTACCAGCTTACCCACTCTCTGATGGCAATCGGGCGCGGAG
AGTGGTTCGGTATGGGTTTGGGTGCGAGTTTGAGCAAACGCGGCTTTCTGCCGGAAGCGC
ATACCGATTTTATTTTTGCCATCATCGCCGAAGAATTCGGTTTCTTCGGTATGTGCGTGC
TGATATTCTGTTACGGCTGGCTGGTCGTGCGGGCGTTTTCCATCGGCAAGCAGTCGCGCG
ATTTGGGTTTGACTTTCAACGCCTATATCGCTTCGGGTATCGGCATTTGCATCGGTATCC
AAAGTTTCTTCAATATCGGTGTGAACATCGGTGCTTTGCCGACCAAAGGTCTGACGCTGC
CGTTGATGTCCTATGGCCGTTCGTCAGTCTTTTTCATGCTGATCAGCATGATGCTGCTGT
TGCGTATAGATTATGAAAACCCCCGGAAAATGCGCGGTTATCGGGTGGAGTAAATCATGG
CCGGTAAAACCTTTATCCTGATGGCGGGCGCAACGGGCCGACATATTTTCCCCGCGCTGG

CGGTGGCGGATTCATTGCGCGCGCGCGGCCATCATGTGATTTGGCTGGGCAGCAAGGATT
CGATGGAAGAGCGTATCGTGCCGCAATACGGCATACGCTTGGAAACGCTGGCGATTAAAG
GCGTGCGCGGCAACGGCATCAAACGCAAACTGATGCTGCCGGTTACTTTGTATCAAACCG
TCCGCGAAGCGCAGCGGATTATCCGCAAACACCGTGTCGAGTGCGTCATCGGCTTCGGCG
GCTTCGTTACCTTCCCCGGCGGTTTGGCGGCGAAGCTATTAGGCGTGCCGATTGTGATTC
ACGAGCAAAACGCCGTGGCAGGTTTGTCCAACCGCCACCTGTCGCGCTGGGCGAAGCGGG
TGTTGTACGCTTTTCCGAAAGCGTTCAGCCACGAAGGCGGCTTGGTCGGCAACCCCGTCC
GCGCCGATATTAGCAACCTGCCCGTGCCTGCCGAACGCTTCCAAGGGCGTGAAGGCCGTC
TGAAAATTTTGGTGGTCGGCGGCAGTTTGGGCGCGGACGTTTTGAACAAAACCGTACCGC
AGGCATTGGCTTTGCTGCCCGACAATGCGCGTCCGCAGATGTACCACCAATCGGGACGGG
GCAAGCTGGGCAGCTTGCAGGCGGATTACGACGCGCTGGGCGTGAAAGCCGAATGCGTGG
AATTTATTACCGACATGGTGTCCGCCTACCGCGATGCCGATTTGGTGATTTGCCGTGCCG
GCGCGCTGACGATTGCCGAGTTGACGGCGGCGGATTGGGTGCGTTGTTAGTGCCGTATC
CTCACGCGGTTGACGATCACCAAACCGCCAACGCGCGTTTTATGGTGCAGGCGGAGGCGG
GATTGCTGTTGCCGCAAACCCAGTTGACGGCGGAAAAACTCGCCGAGATTCTCGGCGGCT
TAAACCGCGAAAAATGCCTCAAATGGGCAGAAAACGCCCGTACGTTGGCACTGCCGCACA
GTGCGGACGACGTGGCGGAAGCCGCGATTGCGTGTGCGGCGTAAACTGCCGAACCATGCC
GTCTGAAAAGCCGTTCAGACGGCATGGATGTTTTTTATTTCAATCCGCTATATATTTGTC
AGAAAACTATGGCGCGCAAACGGTCAGCCCTTTAAAATAACGCCTTTACGCATCGAAAAT
CCACCGGAACGCAACATTATGATGAAAAATCGAGTTACCAACATCCATTTTGTCGGTATC
GGCGGCGTCGGCATGAGCGGCATCGCCGAAGTCTTGCACAATTTGGGCTTTAAAGTTTCC
GGTTCGGATCAGGCGCGAAATGCCGCTACCGAGCATTTGGGCAGCCTGGGCATTCAAGTT
TATCCCGGCCATACCGCCGAACACGTTAACGGTGCGGATGTCGTCGTTACCTCTACCGCC
GTCAAAAAAGAAAATCCCGAAGTTGTCGCTGCGTTGGAGCAGCAAATTCCCGTTATTCCG
CGCGCCCTGATGTTGGCGGAGTTGATGCGCTTCCGTGACGGCATCGCCATTGCCGGCACG
CACGGCAAAACCACGACCACCAGCCTGACCGCCTCCATCCTCGGCGCGGCAGGACTTGAC
CCGACTTTCGTTATCGGCGGCAAACTCAACGCCGCAGGCACTAACGCCCGCTTGGGCAAA
GGCGAATACATCGTTGCCGAAGCCGACGAGTCGGATGCATCCTTTCTGCACCTGACACCG
ATTATGTCCGTCGTTACCAATATCGACGAAGACCATATGGATACCTACGGGCACAGCGTC
GAAAAACTGCATCAGGCGTTTATCGATTTCATCCACCGTATGCCCTTCTACGGCAAAGCC
TTTTTGTGTATTGACAGCGAACACGTCCGCGCGATTTTGCCCAAAGTGAGCAAACCTTAT
GCTACTTACGGTTTGGACGATACCGCCGACATCTACGCCACCGACATCGAAAACGTCGGC
GCGCAAATGAAATTCACCGTCCATGTTCAAATGAAAGGACATGAGCAGGGGTCGTTTGAA
GTCGTGCTGAATATGCCCGGCAGACACAACGTGCTGAACGCATTGGCAGCCATCGGCGTG
GCGCTGGAAGTCGGCGCATCGGTTGAAGCGATCCAAAAAGGCTTGCTCGGCTTTGAAGGC
GTCGGCCGCCGCTTCCAAAAATACGGCGACATCAAGTTGCCAAACGGCGGGACCGCGCTC
TTGGTGGACGACTACGGACACCACCCCGTCGAAATGGCGGCGACCCTTGCCGCCGCACGC
GGCGCGTATCTGGAAAAACGTTTGGTACTCGCCTTCCAGCCGCACCGCTATACCCGCACG
CGCGATTTGTTTGAAGACTTTACCAAAGTCCTCAATACCGTTGACGCGCTGGTGCTGACC
GAAGTTTATGCCGCCGGTGAAGAGCCGATTGCCGCCGCCGATTCCCGCGCTCTTGCCCGC
GCCATCCGCGTGTTGGGCAAACTCGAGCCGATTTACTGCGAAAACGTTGCCGATCTGCCC
GAAATGCTGTTGAACGTTTTGCAGGACGGCGACATCGTGTTGAATATGGGCGCGGGAAGC
ATCAACCGCGTCCCCGCCGCGCTGCTGGCATTGTCGAAACAGATTTGAGGCACACCCGCC
TGACAGACGGAACATCATATAAAGATCGTCTGAAACCGCAAATCAGGTTTCAGACGACCT
CTGGCAACAAGCATAAAGCAATCAGGAAAGAACAAAAACAATGCAGAATTTTGGCAAAGT
GGCCGTATTGATGGGCGGTTTTTCCAGCGAACGAGAAATCTCGCTGGACAGCGGCACCGC
CATTTTGAATGCTTTAAAAAGCAAAGGCATAGACGCATACGCCTTCGATCCTAAAGAAAC
CCCATTGTCTGAATTGAAGGCACAAGGTTTTCAGACGGCATTCAACATCCTTCACGGTAC
TTACGGCGAAGACGGGGCGGTTCAGGGTGCATTGGAACTGTTGGGCATTCCCTATACCGG
CAGCGGTGTCGCCGCATCCGCCATCGGCATGGACAAATACCGCTGCAAACTGATTTGGCA
GGCATTGGGATTGCCCGTTCCCGAGTTCGCCGTCCTGCACGACGACACTGATTTCGATGC
CGTCGAAGAAAAATTGGGCCTGCCGATGTTTGTGAAACCGGCGGCCGAAGGCAGCAGCGT
AGGCGTGGTAAAAGTCAAAGGAAAAGGCCGTCTGAAAAGCGTTTACGAAGAATTGAAACA
CCTTCACGGCGAAATCATTGCCGAACCTTTTATCGGCGGCGGCGAATATTCCTGCCCCGT
CCTGAACGGCAAAGGGCTGCCCGGCATACACATCATTCCCGCAACCGAGTTTTACGACTA
CGAAGCCAAGTACAACCGCGACGACACCATTTATCAATGTCCTTCGGAAGATTTGACCGA
AGCCGAAGAAAGCCTGATGCGCGAACTGGCGGTTCGCGGCGCGCAGGCAATCGGTGCGGA
AGGCTGCGTGCGCGTCGATTTCCTCAAAGATACCGACGGCAAACTCTATCTGTTGGAAAT
CAACACCCTGCCCGGTATGACGAGCCATAGTTTAGTACCGAAATCCGCTGCCGTTACGGG
CGTGGGTTTTGCCGATTTATGTATTGAAATTTTGAAGACCGCACATGTGGGATAATGCCG
AAGCGATGGAACGGCTGACGCGCTGGCTGCTTGTCATGATGGCGATGCTGCTTGCTGCGT
CCGGGCTGGTTTGGTTTTACAATTCGAATCATCTGCCCGTCAAGCAGGTGTCGCTGAAGG
GCAACCTGGTTTATTCCGATAAGAAGACATTGGGCAGTTTGGCGAAAGAATACATCCATG
GGAATATTTTGAGGACGGACATCAATGGCGCACAGGAGGCCTACCGCCGGTATCCGTGGA
TTGCGTCGGTCATGGTGCGCCGCCGTTTTCCCGACACGGTTGAGGTCGTCCTGACCGAGC
GCAAGCCGGTCGCGCGTTGGGGCGACCATGCCTTGGTGGACGGCGAAGGCAATGTTTTTG
AAGCCCGCTTGGACAGACCCGGAATGCCGGTATTCAGAGGCGCGGAAGGAACGTCTGCCG
AAATGCTCCGCCGTTATGACGAATTTTCGACTGTTTTGGCAAAACAGGGTTTGGGCATCA
AAGAGATGACCTATACGGCACGTTCGGCGTGGATTGTCGTTTTGGACAACGGCATCACCG
TCAGGCTCGGACGGGAAAACGAGATGAAACGCCTCCGGCTTTTTACCGAAGCGTGGCAGC
ATCTGTTGCGTAAAAATAAAAATCGGTTATCCTATGTGGATATGAGGTATAAGGACGGAT
TTTCAGTCCGCTATGCTTCCGACGGTTTACCCGAAAAAGAATCCGAAGAATAGTGGGAAC
AGGTATCGGACAGATTACGGCCGTGCCGTCTGAAACGGTGCGACGCAAATTTCAATCAGT
TTTAAGAGCAGACGAACAATGGAACAGCAGCAAAGATACATCAGCGTACTGGATATCGGT
ACGTCTAAAGTCCTCGCACTGATCGGGGAAGTTCAAGATGACGACAAAATCAACATCGTC

GGTTTGGGGCAGGCTCCTTCACGGGGCTTGCGCGGGGGCATGGTAACCAATATCGATGCC
ACCGTCCAAGCCATCAGGCAGGCGGTCAATGATGCCGAGCTGATGGCGGATACCAAAATT
ACTCACGTTACCACAGGTATCGCAGGCAACCACATCCGCAGTCTCAATTCGCAAGGTGTG
GTTAAAATTAAAGATGGGGAAGTCACGCAGGCAGACATCGATCGCGCCATTGAAACGGCA
AAGGCAATCAATATCCCGCCCGATCAAAAAATTCTCGATGCCGTGGTTCAAGACTACATT
ATTGACACCCAACTTGGCGTGAGGGAGCCCATCGGTATGAGCGGTGTGCGTCTGGATACG
CGGGTGCACATCATTACCGGTGCAAGTACGGCAGTGCAGAATGTCCAAAAATGTATCGAG
CGGTGCGGTTTGAAAAGCGATCAGATCATGCTTCAGCCGTTGGCAAGCGGGCAGGCGGTG
CTGACTGAAGATGAAAAAGACCTCGGCGTATGCGTCATCGACATTGGTGGCGGAACGACC
GATATTGCCGTTTATATGAACGGTGCCATCCGCCATACGTCCGTCATTCCGGCCGGTGGT
AATCTGATTACCAAAGATTTGTCCAAATCGTTGAGAACACCTCTCGATGCCGCCGAGTAC
ATTAAAATCCATTATGGCGTGGCATCATGCGATACGGAAGGCTTGGGTGAGATGATTGAA
GTTCCGGGCGTGGGTGACCGGACATCGCGTCAGGTTTCCAGTAAGGTTCTGGCAGCAATC
ATCAGTGCACGGATTCAGGAGATTTTTGGGGTAGTGCTGGGCGAGCTGCAAAAATCGGGT
TTCCCCAAAGAAGTGCTGAATGCGGGTATCGTTCTGACCGGCGGTGTGTCCATGATGACC
GGGATTGTGGAATTTGCCGAAAAAATCTTCGATTTGCCTGTACGCACCGGTGCACCCCAA
GAAATGGGCGGTTTGTCCGACCGCGTCCGCACACCGCGTTTTTCTACCGCTATCGGGCTG
CTTCATGCAGCATGCAAGCTGGAAGGAAACTTGCCGCAGCCGGAAAACGGTGCAGTGCAA
GAGAGGGAAGGGGGCGGCGGTTTGTTGGCAAGATTGAAACGGTGGATTGAAAACAGCTTC
TGAACAGGTGGATTGCCGTTTGACAGGTGAGAAGTATTTTGCCAGCAGCAAGATACTTCT
TATATAATGAATAATAATTTATTTAAACCGTCCTCTGAATGGGGCGAGCAGGAGTTTTTG
AATGGAATTTGTTTACGACGTGGCAGAATCGGCAGTCAGCCCTGCGGTGATTAAAGTAAT
CGGCTTGGGCGGCGGCGGTTGCAATGCAATCAATAACATGGTTGCCAACAATGTGCGCGG
TGTGGAGTTTATCAGTGCCAATACGGATGCGCAGTCTCTGGCAAAAAACCATGCGGCGAA
GAGAATCCAGTTGGGTACGAATCTGACACGCGGTTTGGGCGCGGGCGCGAATCCCGATAT
CGGCCGTGCGGCAGCCCAGGAAGACCGGGAAGCCATTGAAGAAGCCATTCGCGGTGCGAA
TATGCTGTTTATCACGACCGGTATGGGCGGCGGTACCGGTACCGGTTCCGCGCCGGTTGT
TGCTGAGATTGCCAAGTCTTTGGGCATTCTGACCGTTGCCGTGGTTACCCGACCGTTCGC
ATATGAAGGTAAGCGCGTCCATGTCGCACAGGCAGGGTTGGAACAGTTGAAAGAACACGT
CGATTCGCTGATTATCATCCCGAACGACAAACTGATGACTGCATTGGGTGAAGACGTAAC
GATGCGCGAAGCCTTCCGTGCCGCCGACAATGTATTGCGCGATGCGGTCGCAGGCATTTC
CGAAGTGGTAACTTGCCCGAGCGAAATCATCAACCTCGACTTTGCCGACGTGAAAACCGT
GATGAGCAACCGCGGTATCGCTATGATGGGTTCGGGTTATGCCCAAGGTATCGACCGTGC
GCGTATGGCGACCGACCAGGCCATTTCCAGTCCGCTGCTGGACGATGTAACCTTGGACGG
AGCGCGCGGTGTGCTGGTCAATATTACGACTGCTCCGGGTTGCTTGAAAATGTCCGAGTT
GTCCGAAGTCATGAAAATCGTCAACCAAAGCGCGCATCCCGATTTGGAATGCAAATTCGG
TGCGGCTGAAGACGAGACCATGAGCGAAGATGCCATCCGGATTACCATTATCGCTACCGG
TCTGAAAGAAAAAGGCGCGGTCGATTTTGTTCCGGCAAGGGAGGTAGAAGCGGTTGCTCC
GTCCAAACAGGAGCAAAGCCACAATGTCGAAGGTATGATCCGCACCAATCGCGGTATCCG
CACGATGAACCTTACCGCTGCGGATTTCGACAATCAGTCCGTACTTGACGACTTTGAAAT
CCCTGCGATTTTGCGTCGTCAACACAATTCAGACAAATAATGTGCTGTTTGCCCGTAAAC
CTGCTGCCTCCCGAATCGGTTTGTCCGGTTTGGGAGGTATGTTTTTCAAGATGTTGCAAT
TTCGTACGGTTTGCGGTCGGCGGATTCAGATTTTTCCACTTGATACAGACTTTCAGATAT
GGACACTTCAAAACAAACACTGTTGGACGGGATTTTTAAGCTGAAGGCAAACGGTACGAC
GGTGCGTACCGAGTTGATGGCGGGTTTGACAACTTTTTTGACGATGTGCTACATCGTTAT
CGTCAACCCTCTGATTTTGGGCGAGACCGGCATGGATATGGGGGCGGTATTCGTCGCTAC
CTGTATCGCGTCTGCCATCGGCTGTTTTGTTATGGGTTTTGTCGGCAACTATCCGATTGC
ACTCGCACCGGGGATGGGGCTGAATGCCTATTTCACCTTTGCCGTCGTTAAGGGTATGGG
CGTGCCTTGGCAGGTTGCGTTGGGTGCGGTGTTCATCTCCGGTCTGATTTTTATCCTGTT
CAGCTTTTTTAAAGTCAGGGAAATGCTGGTCAACGCACTGCCTATGGGTTTGAAAATGTC
GATTGCTGCCGGTATCGGTTTGTTTTTGGCACTGATTTCCCTGAAAGGCGCAGGCATTAT
CGTTGCCAATCCGGCAACCTTGGTCGGTTTGGGCGATATTCATCAGCCGTCCGCGTTGTT
GGCATTGTTCGGTTTTGCTATGGTGGTCGTATTGGGACATTTCCGCGTTCAAGGCGCAAT
CATCATCACCATCTTGACCATTACCGTCATTGCCAGCCTGATGGGTTTGAATGAATTTCA
CGGCATCATCGGCGAAGTACCGAGCATTGCGCCGACTTTTATGCAGATGGATTTTGAAGG
CCTGTTTACCGTCAGCATGGTCAGTGTGATTTTCGTCTTCTTCTTGGTCGATCTATTTGA
CAGTACCGGAACGCTGGTCGGCATATCCCACCGTGCCGGGCTGCTGGTGGACGGTAAGCT
GCCCCGCCTGAAACGCGCACTGCTTGCAGACTCTACCGCCATTGTGGCAGGTGCGGCTTT
GGGTACTTCTTCCACCACGCCTTATGTGGAAAGCGCGGCGGGCGTATCGGCAGGCGGACG
GACCGGCCTGACGGCGGTTACCGTCGGCGTATTGATGCTCGCCTGCCTGATGTTTTCACC
TTTGGCGAAAAGTGTTCCCGCTTTTGCCACCGCGCCCGCCCTGCTTTATGTCGGCACGCA
GATGCTCCGCAGTGCGAGGGATATTGATTGGGACGATATGACGGAAGCCGCACCTGCGTT
CCTGACCATTGTTTTCATGCCGTTTACTTATTCGATTGCAGACGGCATCGCTTTCGGCTT
CATCAGTTATGCCGTGGTTAAACTTTTATGCCGCCGCACCAAAGACGTTCCGCCTATGGT
ATGGATTGTTGCCGTATTGTGGGCACTGAAATTCTGGTATTTGGGCTGATTGATTCGATA
TTAAAAATGCCGTCTGAAAGGTTTTCAGACGGCATTTTGTTTGCCGATATATTTAATTTT
TATTAAATTATATAAAAATCAAATACATAATAAAATACATCGGATTGCTTAAAAATAATA
CATTGTTTTTATGTATAAAATATTTTATAAGTTTTCAGGATTTTGATTATCAAAAATTTT
TCTTGATTTCCTGACAATTTTATTGAAACAAATAATTCAAAATTAATCTAGTTTAATCAT
GGAATTAAAATAAAATATTAAAATTATGTAATGAGTCTCCTTAAAAATGTTTGACATTTT
CAGTCTTGTGTTTTAGATTATCGAAAAATAAAACTACATAACACTACAAAGGAACATTAC
TATGAAACCAATTCAGATGTTTTCCCCTTTTCTGAATAATCCCCTTGTTTTCTTCTTGTC
TGCGGTTTTGCCGCATAATTCCGAACGGTCTGCTGTTTTTCTTTGATTCGTTTTAAATAT
CAATAAGATAATTTTTCCCATATATTTTTAATGATTGGATTGGGATGCCCGACGCGTCGG
ATGGCTGTGTTTTGCCGTCCGAATGTGATGGAAGCCTGTCCATACTGAAAAAAAGTCTAT

AAAGGAGAAATATGATGAGTCAACACTCTGCCGGAGCACGTTTCCGCCAAGCCGTGAAAG
AATCGAATCCGCTTGCCGTCGCCGGTTGCGTCAATGCTTATTTTGCACGATTGGCCACCC
AAAGCGGTTTCAAAGCCATCTATCTGTCCGGCGGCGGCGTGGCAGCCTGTTCTTGCGGTA
TCCCTGATTTGGGCATTACCACAATGGAAGATGTGCTGATCGACGCACGACCCATTACGG
ACAACGTGGATACGCCTCTGCTCGTGCACATCCATGTCGGTTGGGGCGGTCCATTCAATA
TTGCCCGTACCATTCGCAACTTTGAACGCGCCGGTGTTGCAGCGGTTCACATCGAAGATC
AGGTAGCGCAAAAACGCTGCGGCCACCGTCCGAACAAAGCCATTCTATCTAAAGATGAAA
TGGTCGACCGTATCAAAGCTGCCGTAGATGCGCGCGTTGATGAGAACTTCGTGATTATGG
CGCGTACCCATGCGCTGGCGGTAGAAGCTTTGGATGCCGCTATCGAACGCGCCCAAGCTT
GTGTCGAACCCGGTGCGGACATGATTTTCCCTGAAGCCATGACCGATTTGAACATGTACC
GCCAATTTCCAGATGCGCTGAAAGTGCCCGTCTTGGCGAACATTACCGAGTTTGGTTCCA
CTCCGCTTTATACCCAAAGCGACCTGGCTGAAAACCCCGTGTCGCTGCTGCTGTATCCGC
TGTCATCGTTCCCTGCAGCAAGCAAAGCCGCTCTGAATGTTTACGAAGCGATTATGCGCG
ATGGCACTCAGGCGGCGGTGGTGGACAGTATGCAAACCCGTGCCGAGCTGTACGAGCATC
TGAACTATCATGCCTTCGAGCAAAAACTGGATAAATTGTTTCAAAAATGATTTACCGCTT
TCAGACTGCCTTTCAACAAATCCGCATCGGTCGTCTGAAAACCCGAAACCCATAAAAACA
CAAAGGAGAAATACCATGACTGAAACTACTCAAACCCCGACCCTCAAACCTAAAAAATCC
GTTGCGCTTTCTGGCGTTGCGGCCGGTAATACCGCTTTGTGTACCGTTGGCCGTACCGGC
AACGATTTGAGCTATCGCGGTTACGACATTCTGGATTTGGCACAAAAATGCGAGTTTGAA
GAAGTCGCCCACCTGCTGATTCACGGCCATCTGCCCAACAAATTCGAGCTGGCCGCTTAT
AAAACCAAGCTCAAATCCATGCGCGGCCTGCCTATCCGTGTGATTAAAGTTTTGGAAAGC
CTCCCTGCACATACCCATCCGATGGACCTAATGCGTACCGGCGTATCCATCCTGGGCTGC
GTTCATCCTGAACCTGAAAGCCATCCGCAAAGTGAAGCGCGCGACATCGCCCACAAACTG
ATCGCCAGCCTCGGCAGCATCCTCTTCTACTCGTATCAATATTCGCACAACGGCAAACGC
ATTGAGGTTGAAAGCGACGAACAGACCATCGGCGGTCATTTCCTGCAACTGTTGCACGGC
AAACGCCCAAGCGAATCACACATCAAAGCCATGCACGTTTCACTGATTCTGTATGCCGAA
CACGAGTTCAACGCTTCTACCTTTACCGCCCGCGTGATCGCCGGTACAGGCTCTGATATG
TACTCCAGCATTACCGGAGCAATCGGCGCGTTGAAACGTCCGAAACACGGCGGCGCGAAC
GAAGTGGCTTACCATATTCAAAAACGCTACCGCAATGCCGACGAAGCTGAAGCCGACATC
CGCGAACGCATCCGCCGCAAAGAAATCGTGATCGGTTTCGGTCATCCGGTGTACACCATT
TCCGACCCTCGCAACGTTGTCATTAAAGAAGTGGCACGCGGTTTGAGCAAAGAAACCGGC
GATATGCGCCTCTTTGACATTGCCGAACGTTTGGAAAGCGTGATGTGGGAAGAGAAAAAA
ATGTTCCCGAATCTGGACTGGTTCTCTGCCGTTTCCTACCAAAAATTGGGCGTACCGACC
GCTATGTTCACACCGCTGTTCGTAATTTCCCGTACAACCGGTTGGAGCGCACACGTTCTT
GAGCAACGCAAAGACGGCAAAATCATCCGTCCGAGCGCAAACTACACAGGCCCTGAAGAT
TTGGCGTTTGTGGAGATTGAAGAACGATAATTGAAGAATGCAATAGCAGTTTGTTCTTTA
ATTTCGGTATGCAAAGCTAAGGATTTCAGACGACCTTGCCTTATTGGAAAGGTTGTCTGA
AATAAGTTTAATCTAATAGGAGAAGATAATCCTGTATTGGCGCAACTAACAGGATAAGAA
ACATGGAAGATTTATATATAATACTCGCTTTGGGTTTGGTTGCGATGATTCCCGGATTTA
TCGATGCGATTGCGGGCGGGGGTGGTTTGATTACGCTGCCCGCACTCTTGTTGGCAGGTA
TTCCTCCCGTGTCGGCAATTGCCACCAACAACCTGCAAGCAGCCGCTGCTACGTTTTCAG
CTACGGTTTCTTTTGCACGCAAAGGTTTGATTGATTGGAAGAAAGGTCTCCCGATTGCCC
CACCATCGTTTGTAGGCCGCGTGGCCCGTGCATTATCGGTCAGCTTCGTTTCCAAAGATA
TTCTGCTGGCGGTCGTGCCGGTTTTGTTGATATTTGTCGCACTGTATTTTGTGTTTTCGC
CCAAGCTCGACGGCAGTAAGGAAGGCAAAGCCAGAATGTCTTTTTTTCTGTTCGGGCTGA
CGGTCGCACCGCTTTTGGGTTTTTACGACGGTGTGTTCGGACCGGGTGTCGGCTCGTTTT
TTCTGATTGCCTTTATTGTTTTGCTCGGCTGCAAGCTGTTGAACGCGATGTCTTACACCA
AATTGGCGAACGTTGCCTGCAATCTTGGTTCGCTATCGGTATTCCTGCTGCACGGTTCGA
TTATTTTCCCGATTGCGCCAACGATGCCGGTCGGTGCGTTTCTCGCTGCGAATTTAGGTG
CGAGATTTGCCGTCCGCTTCGGTTCGAAGCTGATTAAGCCGCTGCTGATTGTCATCAGCA
TTTCGATGGCTGTGAAATTGTTGATAGACGAGAGAAATCCGCTGTATCAGATGATTGTTT
CGATGTTTTAAACCCTTTCAGACGACCCCTTCAAAACGTCGGCTGAAACCTCAAACCACA
AGAAAAACAGATCCACACGAGAACCGACATGGCTGCCAACCAACGTTACCGCAAACCGCT
GCCCGGTACGGATTTGGAATACTACGACGCGCGTGCGGCGTGTGACGACATCAACCCCGG
CTCTTACGACAAGCTGCCTTACACGAGCCGCATTTTGGCGGAGAATTTGGTCAACCGCGC
GGACAAAGTCGATTTGCCGACGCTGCAAAGCTGGCTGGGGCAGTTCATAGAAGGCAAGCA
GGAAATCGACTTTCCGTGGTATCCGGCGCGGGTGGTGTGCCACGATATTCTGGGGCAGAC
CGCGTTGGTGGATTTGGCAGGCCTGCGCGATGCGATTGCCGAAAAAGGCGGCGATCCTGC
CAAAGTGAATCCGGTGGTGCAAACCCAGCTCATCGTCGACCACTCTCTGGCGGTGGAGTG
CGGCGGTTACGATCCTGATGCCTTCCGCAAAAACCCCGAAATCGAAGACCGCCGTAACCA
AGACCGTTTCCACTTCATCAACTGGACAAAAACCGCGTTTGAAAATGTGGACGTCATTCC
GGCGGGCAACGGCATCATGCACCAAATCAATCTAGAAAAAATGTCGCCCGTCGTCCAAGT
CAAAAACGGCGTGGCTTTCCCCGATACCTGCGTCGGTACTGACTCACATACGCCGCACGT
CGATTCATTGGGCGTGATTTCCGTGGGCGTGGGCGGATTGGAAGCGGAAACCGTAATGCT
GGGACGCGCGTCCATGATGCGCCTGCCCGATATTGTCGGCCTTGAGCTGAACGGCAAACG
GCAGGCGGGCATTACGGCGACGGATATTGTGTTGGCACTGACCGAGTTTCTGCGCAAAGA
ACGCGTCGTCGGGGCGTTTGTCGAATTCTTCGGCGAGGGCCCGAGAAGCCTGTCTATCGC
CGACCGCGCGACCATTTCCAACATGACGCCGGAGTTCGGCGCGACTGCCGCGATGTTCGC
TATTGATGAGCAAACCATTGATTATTTGAAACTGACCGGACGCGACGACCCGCAGGTGAA
ATTGGTGGAAACCTACGCCAAAACCGCAGGCTTGTGGGCAGATGCCTTGAAAACCGCCGT
TTATCCTCGCGTTTTGAAATTTGATTTGAGCAGCGTAACGCGCAATATGGCAGGCCCAAG
TAACCCGCATGCCCGTTTTGCGACCGCCGATTTGGCGGCGAAAGGGCTGGCGAAGCCTTA
CGAAGAGCCTTCGGACGGCCAAATGCCCGACGGCTCGGTCATCATCGCCGCGATTACCAG
TTGCACCAACACTTCCAACCGGCGCAACGTTGTTGCCGCCGCGCTCTTGGCACGCAATGC
CAACCCTCTCGGCTTGAAACGCAAACCTTGGGTGAAATCTTCGTTTGCCCCGGGTTCAAA

AGTAGCCGAAATCTATTTGAAAGAAGCGGGCCTGTTGCCCGAAATGGAAAAACTCGGCTT
CGGTATCGTCGCCTTCGCCTGCACCACCTGCAACGGCATGAGTGGCGCGCTGGATCCGAA
AATCCAGAAAGAAATCATCGACCGCGATTTGTACGCCACCGCCGTATTATCAGGCAACCG
CAACTTCGACGGCCGTATCCACCCGTATGCGAAACAGGCTTTCCTCGCTTCGCCTCCGTT
GGTCGTTGCCTACGCGCTGGCAGGCAGTATCCGTTTCGATATTGAAAACGACGTACTCGG
CGTTGCAGACGGCAAGGAAATCCGCCTGAAAGACATTTGGCCTGCCGATGAAGAAATCGA
TGCCGTCGTTGCCGAATATGTGAAACCGCAGCAGTTCCGCGATGTGTATGTACCGATGTT
CGACACCGGCACAGCGCAAAAAGCACCCAGTCCGCTGTACGATTGGCGTCCGATGTCCAC
CTACATCCGCCGTCCGCCTTACTGGGAAGGCGCGCTGGCAGGGGAACGCACATTAAGAGG
TATGCGTCCGCTGGCGATTTTGCCCGACAACATCACCACCGACCACCTCTCGCCGTCCAA
TGCGATTTTGGCCGTCAGTGCCGCAGGCGAGTATTTGGCGAAAATGGGTTTGCCTGAAGA
AGACTTCAACTCTTACGCAACCCACCGCGGCGACCACTTGACCGCCCAACGCGCTACCTT
CGCCAATCCGAAACTGTTTAACGAAATGGTGAAAAACGAAGACGGCAGCGTGCGCCAAGG
CTCGTTCGCCCGCGTCGAACCCGAAGGCGAAACCATGCGCATGTGGGAAGCCATCGAAAC
CTATATGAACCGCAAACAGCCGCTCATCATCATTGCCGGTGCGGACTATGGTCAAGGCTC
AAGCCGCGACTGGGCTGCAAAAGGCGTACGCCTCGCCGGCGTAGAAGCGATTGTTGCCGA
AGGCTTCGAGCGTATCCACCGCACCAACCTTATCGGCATGGGCGTGTTGCCGCTGCAGTT
CAAACCCGACACCAACCGCCATACCCTGCAACTGGACGGTACGGAAACCTACGACGTGGT
CGGCGAACGCACACCGCGCTGCGACCTGACCCTCGTGATTCACCGTAAAAACGGCGAAAC
CGTTGAAGTTCCCGTTACCTGCTGCCTCGATACTGCAGAAGAAGTATTGGTATATGAAGC
CGGCGGCGTGTTGCAACGGTTTGCACAGGATTTTTTGGAAGGGAACGCGGCTTAGAGGTC
GTCTGAAAAGCAAGACGTAGCGTGGGTCGGGTTCAACATTTTGCTCATTCACGTAATTCT
CGATATGGCAGGCATCTACTGTAAATCGTCATTCCCGCGCAGGCGGGAATCCAGAAAGTG
GAATTGAGGAAACCTTATTTATCCGATGAGTTTCTGTGCGGACAAATTTGGATTCCCGCC
TGCGCGGGAATGACGGGGTTTAATAATCTGCCGTATCACAACACAGTAGCCGTAGATTGT
GGCGAACCCCGACAGTTTGCGGAATCAAACGGCTTTGTCGGAGTGGCAGCCTAATGTACT
TCTGGAAAGTGGGTGTAGCGTGGGCTTTGCCCGCGAAATAAAGGCTGAATTGACATGGTA
TAGAGGATTAACAAAAATCGGGACAAGGCGGCGAAGCCGCAGACAGTACAGATAGTACGG
AACCGATTCACTTGGTGCTTGAGCACCTTAGAGAATCGTTCTCTTTGAGCTAAGGCGAGG
CAACGCTGTACTGGTTTTGTTAATCCACTATAAATTTAATCCACTATACTGTAAATCGT
CATTCCCGCGCAGGCGGGAATCCAGAAAGTGGAATTGAGGAAACCTTTTTATCCGATGAG
TTTCTGTGCGGATAAATCTGGATTCCCGCCTGCGCGGGAATGACGGGGTTTAATAATCTG
CCGTATCACAACACAGTAGCCGTAGATTGGGGCGAACCCCGACAGTTTGCGGAATCAAAC
GGCTTTGGTCGGAGTGGCAGCCTAATCCACTATAAAAATCGTGGGCAGAGCCCACGCTAC
ATAAGGAGAATCTAGAAATGCCGCAAATTAAAATTCCCGCCGTTTACTACCGTGGCGGTA
CATCAAAAGGCGTGTTTTTCAAACGTTCCGACCTGCCCGAGGCGGCGCGGGAAGCGGGAA
GCGCACGCGACAAAATCCTCTTGCGCGTACTCGGCAGCCCGGATCCCTACGGCAAGCAGA
TAGACGGTTTGGGCAACGCCAGCTCGTCCACCAGCAAGGCGGTGATTTTGGACAAGTCCG
AACGCGCCGATCACGATGTCGATTACCTTTTCGGGCAAGTTTCCATCGACAAACCTTTTG
TCGATTGGAGCGGCAACTGCGGCAACCTCACCGCTGCCGTGGGCGCATTCTCCATCGAAC
AGGGCTTGGTCGATAAAGGCAAGATTCCTTCAGACGGCATCTGCACGGTCAAAATCTGGC
AGAAAAACATCGGCAAAACCATTATTGCCCATGTACCGATGCAAAACGGCGCAGTTTTGG
AAACAGGCGATTTTGAGCTCGACGGCGTAACGTTCCCGGCAGCCGAAGTACAAATCGAAT
TTCTTGATCCAGCCGACGGCGAAGGCAGTATGTTCCCAACCGGCAATTTGGTCGATGAAA
TTGATGTGCCGAATATAGGCCGTTTGAAAGCCACGCTCATCAACGCGGGCATTCCGACCG
TTTTCTTGAATGCCGCCGACTTGGGCTACACAGGCAAAGAGTTGCAAGACGACATCAACA
ACGATGCCGCGGCTTTGGAAAAATTCGAGAAAATCCGCGCTTACGGTGCGCTGAAAATGG
GTCTGATCAGCGACGTATCCGAAGCTGCCGCTCGCGCGCACACGCCGAAAGTCGCCTTCG
TCGCGCCCGCCGCCGATTACACCGCCTCCAGTGGCAAAACCGTGAACGCCGCCGACATCG
ATTTGCTGGTACGCGCCCTGAGCATGGGCAAACTGCACCACGCGATGATGGGTACCGCCT
CTGTTGCCATTGCGACCGCCGCCGCCGTACCCGGTACGCTGGTCAACCTTGCCGCAGGCG
GCGGAACGCGTAAAGAAGTGCGCTTCGGGCATCCTTCCGGCACATTGCGCGTCGGTGCAG
CCGCCGAATGTCAGGACGGACAATGGACGGCCACCAAAGCGGTCATGAGCCGTAGCGCAC
GCGTGATGATGGAAGGTTGGGTCAGGGTGCCTGAGGATTGTTTTTAAATTGACGTAGCAT
GGGTTTGCCCGCGAGCCATAAAAAGGTCGTCTGAAAAACAAGTAAACATCAAATCACTGA
CCATTCCTTTCCCTTGCCCTGTGGCGGAAGGCGGCAAATCACAAGGAAGAACACGGAAAC
CCCGATAAAAGACAGCTTCCCGTATTACCGTCATTCCCGCGCAGGCGGGAATCCAGACCT
GTCAATATGGAGGATTGGCAGGGGAAAACAGGTTTCGTGAGTTCTACATTCTGGATTCCC
GCCACAGCCTGTCCTCGCGTAGGCGGGGACGGAATAACGATAGAAAATGCGGCATACGCT
TTGCCCAAAGAGGCCGTCTGAAACACCTTGCGCCTGATGTCTGCCTTTTTCAGACGACCC
CACACCAAAAAAACAACCACAAACTACAAGGAGAAACATCATGTCCGACCAACTCATCCT
CGTTCTGAACTGCGGCAGTTCATCGCTCAAAGGCGCCGTTATCGACCGAAAAAGCGGCAG
CGTCGTCCTAAGCTGCCTCGGCGAACGCCTGACCACGCCCGAAGCCGTCATTACGTTCAA
CAAAGACGGCAACAAACGCCAAGTTCCCCTGAGCGGCCGAAATTGCCACGCCGGCGCGGT
GGGTATGCTTTTGAACGAACTGGAAAAACACGGTCTGCACGACCGCATCAAAGCCATCGG
CCACCGCATCGCCCACGGCGGCGAAAAATACAGCGAGTCTGTTTTGATCGACCAGGCCGT
AATGGACGAACTCAATGCCTGCATTCCGCTTGCGCCGCTGCACAACCCCGCCAACATCAG
CGGCATCCTTGCCGCACAGGAACATTTCCCCGGTCTGCCCAATGTCGGCGTGATGGATAC
TTCGTTCCACCAAACCATGCCGGAGCGTGCCTACACTTATGCCGTGCCGCGCGAGTTGCG
TAAAAAATACGCTTTCCGCCGCTACGGTTTCCACGGCACCAGTATGCGTTACGTTGCCCC
TGAAGCCGCACGCATCTTGGGCAAACCTCTGGAAGACATCCGCATGATTATTGCCCACTT
AGGCAACGGCGCATCCATTACCGCCATCAAAAACGGCAAATCCGTCGATACCAGTATGGG
TTTCACGCCGATCGAAGGTTTGGTAATGGGTACACGTTGCGGCGACATCGATCCGGGCGT
ATACAGCTATCTGACTTCCCACGCCGGGATGGATGTTGCCCAAGTGGATGAAATGCTGAA
CAAAAAATCAGGTTTGCTCGGTATTTCCGAACTTTCCAACGACTGCCGCACCCTCGAAAT

CGCCGCCGACGAAGGCCACGAAGGCGCGCGCCTCGCCCTCGAAGTCATGACCTACCGCCT
CGCCAAATACATCGCTTCGATGGCTGTGGGCTGCGGCGGCGTTGACGCACTCGTGTTCAC
CGGCGGTATCGGCGAAAACTCGCGTAATATCCGTGCCAAAACCGTTTCCTATCTTGATTT
CTTGGGTCTGCACATCGACACCAAAGCCAATATGGAAAAACGCTACGGCAATTCGGGCAT
TATCAGCCCGACCGATTCTTCTCCGGCTGTTTTGGTTGTCCCGACCAATGAAGAACTGAT
GATTGCCTGCGACACTGCCGAACTTGCCGGCATCTTGTAGCCAAAAAAGGGACGAGTCCG
CAAAAATGCCGTCTGAAACCCCAAACGCCCGATTAGGCTGATGAGGATTTTAGACGGCAT
TGTTCATTTTTTTGTTATCTTGCATTTTTGTGCGGACGGTGGAATTTCATCCTGTAAACA
TAAATATTTGTCGGAAAACAGAAACCCTCCGCCGCCATTTCTACGAAAGCAGGAAACCAG
CAACGCAAAGCGACAGGGATTTGTTGGAAATGACCGAAACCGAACGAACCGGATTCCCGC
CTGCGCGGGAATGACGGGATTTTCTGTTTTTGTGGAAATGACGGGATTTTGAATTTCGGG
CGTACAATACGGAAAACATGACGATAAGGAAACAAACCATGGCACAGTTTTTCGCTATTC
ATCCCGACAATCCCCAAGAACGCCTCATCAAGCAGGCGGTTGAAATCGTCAATAAAGGCG
GCGTGGTCGTTTATCCGACCGATTCCTGTTATGCCTTGGGCTGCAAACTCGGCGATAAGG
CGGCGATGGAACGCATACTCTCCATCCGCAAAATCGATTTGAAACACCACCTGACCCTGA
TGTGCGCAGATTTGAGCGAGTTGGGCACATACGCCAAAGTCGACAACGTACAGTTTCGTC
AGCTTAAAGCCGCCACACCCGGGCCTTATACTTTTATTTTACAGGCGACGAAGGATGTGC
CGGCGCGCACGCTGCACCCGAAACGCAAAACCATCGGGCTGCGTATTCCCGATAATGCCA
TTGCACAAGCCCTGCTGGGGGAATTGGGCGAGCCGCTTTTAAGCTGCACCCTGATGCTGC
CCGAAGACGGCGAACCATTGACCGATCCTTATGAAATCCGCGAGCGTTTGGAACACGCCG
TCGATTTGGTGATTGACGGCGGCTGGTGCGGAACCGAGCCGACCACCGTCGTCGATATGA
CCGACGGCACGGAATTGGTGCGCCAAGGTTGCGGCGATACGGCGGTGTTCGGTTTGTAGG
GAAACCGATGCCGTCTGAAGCATCGGCTGTTCAGACGGCATTGCGCGCCTTGCCGGCGGC
AGTCCGAAATGCCGGCGCGTATCGCGCTCGGTCGGAATATCCGTTTGAAACGGCATTTTG
ATGCATTACTGCACCGCAATCGGAATTCTCGGTTCGTAGAGCAGGTCGTAGGTCGGCTTG
TTGAGCAGGTCTTGGAGCGTGAAACCGTCCAGATACGTGAAAAACGACTTCATCGCGCCG
CCGAGTATGCCCGTCAGCCGGCAGGACGGTGTAATCAGGCATTCGTTGTTCTCGCCCATG
CACTCGACCAGCTGCATCGGTTCGAGGTGGCGGACAACCGAGCCGATGTTGATGCGGTCG
GGCGGTGCGGCAAGCCGCAGACCGCCGCCTTTTCCGCGCACACTGTGGAGGAAGCCGCCT
TTGACCAGCGCGGTAACGACCTTCATCAGATGGCTTTTGGAAATGCCGTAGGTTACGGCG
ATGGTACTGATGTTGACCAGCGCATCGTCGTTGATGGCAGTGTAGATAAGGACGCGCAGC
CCGTAGTCCGTATGTTGTGTCAAATACATGATTTTCTCGGTATGGATTGTTATTCTTATC
GGTACGGTTTAAGGTTCACGGACAATACCTTAATGGTTGAAACCCTGTCCGTCGGGGCGG
TAGAATGCAGCCTGTCTGCGGCGGTATGCCGTCTGAAACATCCGCGCTACCGTTTGAGAA
TTTGTTATTGTAACTCAAAATCATGAAACCGTTGAAACGACATCCCGCCCTTATCGGGCT
TTCGCGTGACCACCACCATTCGCTTTCCCTGTGCGTGCGTCTGTTGCGGACGCCGGAAGA
AAGGCATCGGGACGAACTCGAACCGCATTTTTCCGAATTGGAAACCCATTTTCGCGAAGA
AGAAACCAAGTTTGCCCCAATTTGGCAGAATGTCGCCCCCGAATTGAAACAACGTTTCGA
GAAAGACCACGCCCGACTGCGGCAGATGATGGCAAGCCCCGAATACGGTAACGCGGCGTG
GAATACCGCTTTTGCCACAACCCTGCGCGACCACGCGCGCTTTGAAGAACGCGAGCTGTT
TCCCGCCGCCGAACCGTTTTTGCCGGCATGATTCCGTTTTGCGGTAAATATATTAATGAT
AAACAAGGAACACACATGAAATTTACCAAGCACCCCGTCTGGGCAATGGCGTTCCGCCCA
TTTTATTCGCTGGCGGCTCTGTACGGCGCATTGTCCGTATTGCTGTGGGGTTTCGGCTAC
ACGGGAACGCACGAGCTGTCCGGTTTCTATTGGCACGCGCATGAGATGATTTGGGGTTAT
GCCGGACTGGTCGTCATCGCCTTCCTGCTGACCGCCGTCGCCACTTGGACGGGGCAGCCG
CCCACGCGGGGCGGCGTTCTGGTCGGCTTGACTATCTTTTGGCTGGCTGCGCGGATTGCC
GCCTTTATCCCGGGTTGGGGTGCGTCGGCAAGCGGCATACTCGGTACGCTGTTTTTCTGG
TACGGCGCGGTGTGCATGGCTTTGCCCGTTATCCGTTCGCAGAATCAACGCAACTATGTT
GCCGTGTTCGCGCTGTTCGTCTTGGGCGGCACGCATGCGGCGTTCCACGTCCAGCTGCAC
AACGGCAACCTAGGCGGACTCTTGAGCGGATTGCAGTCGGGCTTGGTGATGGTGTCGGGT
TTTATCGGTCTGATTGGTACGCGGATTATTTCGTTTTTTACGTCCAAACGCTTGAATGTG
CCGCAGATTCCCAGTCCGAAATGGGTGGCGCAGGCTTCGCTGTGGCTGCCCATGCTGACT
GCCATGCTGATGGCGCACGGTGTGTTGGCTTGGCTGTCTGCCGTTTTTGCCTTTGCGGCA
GGTGTGATTTTTACCGTGCAGGTGTACCGCTGGTGGTATAAACCCGTGTTGAAAGAGCCG
ATGCTGTGGATTCTGTTTGCCGGCTATCTGTTTACCGGATTGGGGCTGATTGCGGTCGGC
GCGTCTTATTTCAAACCCGCTTTCCTCAATCTGGGTGTGCATCTGATCGGGGTCGGCGGT
ATCGGCGTGCTGACTTTGGGCATGATGGCGCGTACCGCGCTTGGTCATACGGGCAATCCG
ATTTATCCGCCGCCCAAAGCCGTTCCCGTTGCGTTTTGGCTGATGATGGCGGCAACCGCC
GTCCGTATGGTTGCCGTATTTTCTTCCGGCACTGCCTACACGCACAGCATCCGCACCTCT
TCGGTTTTGTTTGCACTCGCGCTTTTGGTGTATGCGTGGAAGTATATTCCTTGGCTGATT
CGTCCGCGTTCGGACGGCAGGCCCGGTTGAGACAAACCGCCGCAGATTTCGGGTCTGGGC
GGTTTGCTTTTCAGACGGCAGGGCGGTCAGTTGCCGTCCAGCCAGCGGTCGCGTGTGGTT
TTGGCTTCTTCAAAATAGCGGTACAGGGCTTCGCGGTCGTCGGTGGTCAGGATGTTTGCC
AAAACGTCCAACTGTTTGCCCAAGCCTTGAACCAGTTGCAGCAGGCTGTCTTTGTTGGCA
AGGCAGATGTCCGCCCACACGGCGGGATGACCGGAGGCGATGCGGGTGAAGTCCCGAAAG
CCCGTGGCGGCGAATTTCAGATATTCCTGTCCGTCGGGGTGGTCGAGAATCTGGTGGACA
TAGGCGAAGGCGGTCAGGTGGGGCATATGGGAGACGGCGGCGAAAACCGCGTCGTGGCGT
TGCGCGTCCATCGTATAAATTTCCGCACCGACCGCGTGCCACAGGTTTTCTACCAAGGCA
ATGCCGTCTGAATGTTCGCCGCCGTGTGGCGTGATGATGAGTTTTCTGTGGCGGAACAGC
CCGAACTGCGCGGCTTGCGCACCGCTTCTGTCCGAACCGGCAATTGGGTGGGCGGCGATG
CAGTGGTGCAGGCGGTCGGGCAGACAGCGGCGGAAGGCTTCGATGACCGAAGATTTGGTG
CTGCCGACATCGGAAATCCAAGTGTGTTCCGGCAAAACGGGGCGCAGCGCGGTCAAAATG
GCGGGAACGGTGGCGACGGGCGTGGCAATCAGTACCAAGTCCGCACCGCCGATGCTGTCC
GCGTCGATGGCAACGGAAGCCTGGTCAATCACGCCGCGTTCCAATGCACGTTCGAGGTTG
TCGCGGTCGGTGTCGATACCGGTAACGGTGCGGACGAGTCCCTGCCTTTTGAGGTCGAGA

ACGAACGAACCGCCGATCAGCCCTACACCGATGAGGGCAATATGGTTCAAAATGGGCATT
TGTGTAAACGGTTTTCGCAAAGTACCGTCATGGTAGCCTATCGGCGGAATATGCCGCAAG
GTCGGCAGGAAAAAGGAGAAGAAATGGACAAAATCAGAGTTGCCGCCGTGCAGATGGTGT
CGGGCGTGTCGCCGGAAACCAACGTCGCCGCCATGAAACGCCTGGTCGCACGGGCGGCGG
AGCAGGGTGCGGATTGGGTGCTGCTGCCCGAATATTGGGTGCTGATGGGCGCAAACGATA
CCGACAAACTCGCGCTTGCCGAGCCTTTGGGCGGCGGACGCTTTCAGACGGCATTGAGCG
AAACGGCGAAAGAATGCGGCGTGGTGCTGTTCGGCGGGACTGTGCCGCTGCAAAGCTGCG
AGGCGGGTAAAGTGATGAATACGCTGTTGGTGTACGGACGGGACGGCGTAAGGACGGGGC
TGTACCACAAAATGCACCTCTTCGGTTTTTCCGGTTTGGGCGAACGCTATGCCGAAGCCG
ATACCATCCGCGCGGGCGGGGATGTGCCGCACTTGTCGGCAGAAGGCGTGCCGGTGGCGG
CGGGCATTTGTTACGATGTCCGCTTTCCCGAATTTTTCCGACGCCAGTTGCCGTTTGACG
TATTGATGCTGCCCGCTGCGTTTACGCACACGACGGGCAAGGCGCATTGGGAGCTGCTGC
TGCGCGCGCGTGCCGTCGAAAACCAATGTTACGTCGTGGCGGCGGCACAGGGCGGTTTGC
ACGAAAACGGACGGCGCACGTTCGGACACAGCATGATTGTCGATCCGTGGGGCGACGTGT
TGGACGTATTGCCCGAGGGCGAAGGCGTTGTTACGGCAGACATCGATGCCAACCGCCTGA
ACAGCGTCCGCAACCGCCTGCCCGCCTTGAAATACCGGGTTTTGGATGCCGTCTGAAGGT
TCAGACGGCATCGGTGCCGGGGAATCAGAAGCGGTAGCGCATGCCCAATGAGACTTCGTG
GGTTTTGAAGCGGGTGTTTTCCAAGCGTCCCCAGTTGTGGTAACGGTATCCGGTGTCCAA
GGTCAGCTTGGGCGTGATGTCGAAACCGACACCGGCGATGACACCAAGACCCACGCTGCT
GATGCTGTGGCTTTCGTGATAGGGAGGTTTGCTGGGATCAGTTTGTATAATAGGGCCTCC
CTGTGGAGAGCCGTTCTTTGGTTTAGAGGTAATAGTCGTGGTTTTTGTTTCCACCGAATG
AACTTGATGTTTAACGTGTCCGTAGGCGACGCGCGCGCCGATATAGGGTTTGAATTTATC
GTTGAGTTTGAAATCGTAAATGGCGGACAAGCCGAGAGAAGAAACGGCGTGGAAGCTGCC
GTTTCCCTGATGTTTTGTTTGGGTTTCTTTGTAGTTGTTGTTTATCTCTTCAGTAACTTT
TTTAGTAGAAGAATTACTTTCTTTCCATTTTCTGTAACTGGCATAATCTGCCGCTATTCT
CCAGCCGCCGAAATCATAGCCGACCGACACCCGGGGGTGGATGGAATGCGCACGGATGTT
TCTGAAATAATCGCTTACCGTGCTTGTGTTGTTTGCACCGGTTGCTTGCGGATAATCGTG
GGTAATGCGTTCGGCGGCATAAGCTAAATCCGCCTGCACATAATACGGGCTGCGGCTGCC
GTCTTCACTTGCCGCCTGCGCTGCGGAAGAGAAGAGAAGAGAAGAGAAGAGAAGAGAAGA
GAAGAGAAGAGAAGAGAAGGTTTTTGGGGGCTGGATTCATTTTCGACTCCGTATTCGGT
TTTAACTGATTAAAAAGAAAGATTTTCACTGATGTTGCAGGGGTGGATTGTATCGGGTTT
GGGGCGATGTTTCAACACAATATAGCGGATGAACAAAAAAGAGAACGATGCTCTAAGGTG
CCCAAGCACCAAGTGAATCGGTTCCGTACTATATAGTGGATTAACAAAAACCAGTACAGCGT
TGCCTCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTGCTGAAGCACCGAGTGAATCGG
TTCCGTACTATTTGTACTGTCTGCGGCTTCGTCGCCTTGTCCTGATTTTTGTTAATCCGC
TATAAAGACCGTCGGGCATCTGCAGCCGTCATTCCCGCGCAGGCGGGAATCTAGACCTTA
GAACAACAGCAATATTCAAAGATTATCTGAAAGTCTGAGATTCTAGATTCCCACGAAAGT
GGGAATCCAGGATGTAAAATCTCAAGAAACCGTTTTATCCGATAAGTTCCTGCACTGACA
GACCTAGATTCCCGCCTGCGCGGGAATGACGGGATTTTAGGTTTCTGATTTTGGTTTTCT
GTCCTTGTGGGAATGACGGGATGTAGGTTCGTAGGAATGACGTGGTGCAGGTTTCCGTGC
GGATGGATTCGTCATTCCCGCGCAGGCGGGAATCTAGACCTTAGAACAACAGCAATATTC
AAAGATTGGCGGATTCGCATTTGAAGTGCAACTTTCCCTAACAGAAAAAGGCCAGTATGC
GGTAGCATACGGCCTTTCCTGCAAGAAAGATTGCCATGAGCTACACGCAACTGACCCAAG
GCGAACGATACCACATCCAATACCTGTCCCGCCACTGCACCGTCACCGAAATCGCCAAAC
AGCTGAACCGCCACAAAAGCACCATCAGCCGCGAAATCAGACGGCACCGCACCCAAGGGC
AGCAATACAGCGCCGAAAAAGCCCAGCGGCAAAGCCAGACTATCAAACAGCGTAAGCGAC
AACCCTATAAGCTCGATTCGCAGCTGATTCAGCACATCGACCCCCTTATCCGCCGCAAAC
TCAGTCCCGAACAAGTATGCGCCTACCTGCGCAAACACCACCAGATCACGCTCCACCACA
GCACCATTTACCGCTACCTTCGCCAAGACAAAAGCAACGGCAGCACGTTGTGGCAACATC
TCAGAATATGCAGCAAACCCTACCGCAAACGCTACGGCAGCACATGGACCAGAGGCAAAG
TACCCAACCGTGTCGGCATAGAAAACCGACCCGCTATCGTCGACCAGAAATCCCGTATCG
GCGATTGGGAAGCCGACACCATTGTCGGCAAAGGACAGAAAAGCGCATTATTGACCTTGG
TCGAACGCGTTACCCGCTACACCATCATCTGCAAATTGGATAGCCTCAAAGCCGAAGACA
CTGCCCGGGCAGCTGTTAGGGCATTAAAGGCACATAAAGACAGGGTGCACACCATTACCA
TGGATAACGGCAAAGAGTTCTACCAACACACCAAAATAACCAAAGCATTGAAAGCGGAGA
CTTATTTTTGTCGTCCTTACCATTCTTGGGAGAAAGGGCTGAATGAGAACACCAACGGAC
TCATCCGGCAATACTTCCCCAAACAAACCGATTTCCGTAACATCAGTGATCGGGAGATAC
GCAGGGTTCAAGATGAGTTGAACCACCGACCAAGAAAAACACTTGGCTACGAAACGCCAA
GTGTTTTATTCTTGAATCTGTTCCAACCACTAATACACTAGTGTTGCACTTGAAATCCGA
ATCCAAGATTATCTGAAAGTCTGAGATTCTAGATTCCCACTTTCGTGGGAATGACGGGAT
TTTAGGTTTCTGATTTTGGTTTTCTGTCCTTGTGGGAATGACGGGATGTAGGTTCGTAGG
AATGACGTGGTGCAGGTTTCCGTGCGGATGGATTCGTCATTCCCGCGCAGGCGGGAATTT
GGAATTTCAATGCCTCAAGAATTTATCGGAAAAAACCAAAACCCTTCCGCCGTCATTCCC
ACGAAAGTGGGAATCTAGAAATGAAAAGCAGCAGGCATTTATCGGAAATGACCGAAACTG
AACGGACTGGATTCCCGCTTTTGCGGGAATGACGGCGACAGGGTTGCTGTTATAGTGGAT
GAACAAAAACCAGTACGGCGTTGCCTCGCCTTAGCTCAAAGAGAACGATTCTCTAAGGTG
CTGAAGCACCAAGTGAATCGGTTCTGTACTATTTGTACTGTCTGCGGCTTCGTCGCCTTG
TCCTGATTTTTGTTCATCCGCTATACTTTTGTATGACCATCTGACTTTATCACTCACTAT
GTTTTACCAAATCCTTGCCCTGATTATCTGGAGCAGCTCGTTTATTGCCGCCAAATATGT
CTATGGCGGCATCGATCCCGCATTGATGGTCGGCGTGCGCCTGCTAATTGCCGCGCTGCC
TGCACTGCCCGCCTGCCGCCGTCATGTCGGCAAGATTCCGCGTGAGGAATGGAAGCCGTT
GCTGATTGTGTCGTTCGTCAACTATGTGCTGACCCTGCTGCTTCAGTTTGTCGGGTTGAA
ATACACTTCCGCCGCCAGCGCATCGGTCATTGTCGGACTCGAGCCGCTGCTGATGGTGTT
TGTCGGACACTTTTTCTTCAACGACAAAGCGCGTGCCTACCACTGGATATGCGGCGCGGC
GGCATTTGCCGGTGTCGCGCTGCTGATGGCGGGCGGTGCGGAAGAGGGCGGCGAAGTCGG

CTGGTTCGGCTGCCTGCTGGTGTTGTTGGCGGGCGCGGGCTTTTGTGCCGCTATGCGTCC
GACGCAAAGGCTGATTGCACGCATCGGCGCACCGGCATTCACATCTGTTTCCATTGCCGC
CGCATCGTTGATGTGCCTGCCGTTTTCGCTTGCTTTGGCGCAAAGTTATACCGTGGACTG
GAGCGTCGGGATGGTATTGTCGCTGCTGTATTTGGGTTTGGGGTGCGGCTGGTACGCCTA
TTGGCTGTGGAACAAGGGGATGAGCCGTGTTCCTGCCAATGTTTCGGGACTGTTGATTTC
GCTCGAACCCGTCGTCGGCGTGCTGCTGGCGGTTTTGATTTTGGGCGAACACCTGTCGCC
CGTGTCCGCCTTGGGCGTGTTTGTCGTCATCGCCGCCACCTTGGTTGCCGGCCGGCTGTC
GCATCAAAAATAAAGTTGGGAAGCGGTATTTGATGATTGCCGAATAGGCTGAAATCTTTC
CATCTCCATTCCTGCGAAAGCGGGTATCCGGAACGAAAAGACGGATATTTATCCGAAATA
ACGACCATCTTTGCGTCGTCATTCCCGCGCAGGCGGGCATCCGGTTTTTTGAGTTTCGGT
TATTTCCGACAAATTGCTGCAGCGTTGGATGTCCGGATTTCCGCCTGCGCGGGAATGACG
GGATTTTATAGTGGATTAACAAAAATCAGGACAAGGCGGCGAGCCGCAGACAGTACAGAT
AGTACGGAACCGATTCACTTGGTGCTTCAGCACCTTAGAGAATCGTTCTCTTTGAGCTAA
GGCAAGGCAACGCTGTACTGGTTTTTGTTAATCCACTATATCGTTCCGGTTCGTCCGGTT
TTGCCGGGGCTTTTGTTGCCGCCTGTTTGTGCCGGTGTGTTAAAATTTTCCGTTTCCGCG
TATTGTGTTTTCCGCCGCCGGGCGGTTTGTTTGCGAATCGGACGAGAATTTATGCCTTCT
GCCCATTATCCTGAAATGAGCGAAAAACTGATGGCGGTTTTGATGGCGATGCTGGTTACG
CTGATGCCGTTTTCCATCGATGCCTACCTGCCCGCGATTCCCGAAATGGCGCAATCGCTG
AACGCGGATGTTCACCGCATCGAACAGAGTTTGAGTTTGTTTATGTTCGGCACGGCGTTC
GGACAGGTGGTCGGCGGTTCGGTGTCCGACATCAAAGGGCGCAAACCCGTCGCCCTGACC
GGTTTGATTGTATATTGCCTTGCCGTTGCCGCCATCGTATTTGTTTCGAGTGCCGAACAG
CTCCTCAACCTGCGCGTCGTGCAGGCATTCGGTGCGGGCATGACTGTGGTCATCGTCGGC
GCAATGGTGCGCGATTATTATTCCGGACGCAAAGCCGCCCAGATGTTTGCCCTTATCGGC
ATCATTTTGATGGTTGTGCCGCTGGTCGCACCCATGGTCGGCGCATTGTTGCAGGGCTTG
GGTGGCTGGCAGGCGATTTTTGTTTTTCTGGCGGCGTATTCGCTGGTGCTGCTCGGTTTG
GTACAGTATTTCCTGCCCAAGCCCGCCGTCGGCGGCAAAATCGGACGGGACGTGTTCGGG
CTGGTGGCGGGGCGGTTCAAGCGCGTATTGAAAACCCGTGCTGCGATGGGTTATCTGTTT
TTTCAGGCATTCAGCTTCGGTTCGATGTTCGCCTTTCTGACCGAATCTTCCTTCGTGTAC
CAGCAGCTCTACCGTGTTACGCCTCATCAATACGCTTGGGCGTTTGCACTCAACATCATC
ACGATGATGTTTTTCAACCGCGTTACCGCGTGGCGGCTCAAAACCGGCGTGCATCCGCAA
AGCATCCTGCTGTGGGGGATTGTCGTCCAGTTTGCCGCCAACCTGTCCCAACTCGCCGCC
GTGCTGTTTTTCGGGTTGCCCCCGTTTTGGCTGCTGGTCGCGTGCGTGATGTTTTCCGTC
GGTACGCAGGGCTTGGTCGGTGCAAACACGCAGGCGTGTTTTATGTCCTATTTCAAAGAA
GAGGGCGGCAGCGCAAACGCCGTATTGGGTGTATTCCAATCTTTAATCGGCGCGGGGGTG
GGTATGGCGGCGACCTTCTTGCACGACGGTTCGGCAACCGTGATGGCGGCAACGATGACC
GCGTCCACCTCTTGCGGCATTGCGCTTCTGTGGCTCTGCTCGCATCGTGCGTGGAAAGAA
AACGGGCAAAGCGAATACCTTTAACGGAAAATGCCGTCTGAAACCGTTTCAGACGGCATT
TGATGTTAGAATGCACGATAAATTACTGTTCAGGCGAAATTATGTCCCAAACTATCGACG
AACTCCTCCTTCCCCACCGCAACGCCATCGACACCATCGATGCCGAAATCCTGCGCCTGC
TCAACGAACGTGCGCAACACGCCCACGCCATCGGCGAGCTGAAAGGCACGGGCGCAGTGT
ACCGCCCCGAACGCGAAGTCGCCGTGTTGCGCCGCATTCAGGATTTGAACAAAGGCCCGC
TGCCCGACGAATCGGTAGCACGCCTGTTTCGGGAAGTGATGAGCGAGTGCCTCGCCGTCG
AACGCCCGCTGACCATCGCCTATCTGGGGCCGCAGGGCACGTTTACCCAGCAGGCGGCAA
TCAAACATTTCGGACACGCCGCGCACACCATGGCGTGTCCGACCATAGACGACTGCTTCA
AGCAGGTTGAAACGCGTCAGGCGGATTATCTGGTCGCCCCCGTGGAAAATTCGACCGAAG
GCTCGGTCGGTCGCACGTTAGACCTGCTTGCCGTTACCGCGTTGCAGGCGTGCGGCGAAA
TCGTTTTGCGCATCCACCACAACCTTTTGCGTAAAAACAACGGCAGCACCGAAGGCATTG
CCAAAGTCTTTTCCCACGCGCAGGCGTTGGCGCAGTGCAACGACTGGTTGGGCAGACACC
TGCCCAACGCCGAACGGATTGCCGTGTCCAGCAATGCCGAAGCCGCAAGGCTGGTTGCCG
AATCGGACGACGGTACGGTTGCCGCCATCGCCGGACGCACGGCGGCGGAAATCTACGGAC
TCGATATGGTTGCCGAGTGCATCGAAGACGAACCGAACAACACCACGCGCTTCTTGGTGA
TGGGACATCACGAAACCGGTGCAAGCGGCAGCGACAAGACTTCGCTGGCCGTTTCCGCGC
CCAACCGGGCAGGCGCGGTTGCCTCGCTGCTGCAACCGCTGACCGAATCGGGTATTTCCA
TGACCAAGTTTGAGAGCCGTCCGAGCAAATCCGTTTTGTGGGAATACCTGTTCTTCATCG
ACATCGAAGGACACCGCCGGGACGCGCAGATTCAGACGGCATTGGAACGCTTGGGCGAAC
GCGCTTCGTTCGTCAAAGTCATCGGTTCGTACCCGACCGCCGTTTTGTAGCGGCGGCAGC
GTTCAGACGGCATTTCCCCAACGATTATGTCCGAATACCGAGTCAACCATGAACCCGTTT
TTATGCTGGCATCTTCGCCCTGGCGCGAAAGCAGCCTGTGGGTTGAAGCATTCAGCCGCC
GTTACGGGCGTGTGGCTTTGCTGGCGCGCAGCGCGCGCAAAAGGCAGAGCGAGCTGCGCG
GCGTATTGGTGCCGTTCGTGCCCGTCAGCGTGTCGTGGTACGGCAGTCAGGAACTCAAAA
CCCTACACCGCGCCGAATGGGTCGGCGGTTGGCGGCAGCCTCAGGGCAGGGCGTTGTTCG
GCGGATTGTATGTGAACGAGTTGGTGTTGAAACTGACCGCCCGCGAAGACCCGGTGCCCG
AGTTATACGACGCGTTGGCGGAAGTGATGGAGGCGGTGTGCTGCAAAGCCGCTTATATCG
ACGACTTGCGCCGTTTCGAGTGGCGGCTGCTGAACCTGTTGGGCGTTGCCCCCGATTTGA
ACCGCGACGGGGACGGCGGGACGATTGCGGCAGGCGGCACATACCTTGTCCGCCCGGAAA
CAGCCGTCTTCCCCGTCGGAAAAGGATTTGCCGTACCGCCGCACGCCGCCGGCGTTGTCG
CCCCCGGGCAGAGCCTGATCGATTTGCGCGAAGGCAGTTTCCGCACTGCCGAAAGCCTGC
AACAGGCATTGAAAATCACACGGCTTTTTATCCGCCACCTGTTGCCCGAGGGGCTGAAAT
CGCGGCAGGTGTTGGAACAGATACGGCAGTTTGACCGCAAAGAAACCGCCCGGGAAACCG
TCCCGACTTCGGACGGCACGGCTTCAAATGCCGTCTGAAGGCAGAAATAAAAGGAAAGAT
TATGCTTTTAGGTGTCAACATCGACCACATCGCCACCGTCCGCAATGCGCGCGGTACGAC
TTATCCCAGCCCCGTGGAGGCGGCACTGGTTGCCGAAACGCACGGTGCGGATTTGATTAC
CATGCACCTGCGCGAAGACCGCCGCCACATCAAAGACGCGGACGTGTTTGCCGTCAAAAA
CGCCATCCGCACGCGCCTGAACCTTGAAATGGCGTTGACGGAAGAAATGTTGGAAAACGC
TTTGAAAGTGATGCCGGAAGACGTGTGCATCGTGCCTGAAAAACGTCAGGAAATCACGAC

CGAAGGCGGTTTGGACGTATTGGCGCAACAGGAAAAAATCGCCGGGTTCACCAAAATCCT
GACCGACGCAGGCATACGCGTGTCTTTGTTTATCGATGCCGACGACAGGCAAATCCAAGC
CGCCGGTGATGTCGGCGCGCGCGTTGTCGAGGTGCACACAGGCGCGTATGCGGACGGGCG
CAGCGACGCCGAACAAATCAGGCAGTTCGAGGGCATCCAAAACGGCGCGCATTTCGCCGG
CGATTTGGGCTTGGTCGTCAACGCCGGACACGGACTGACCATACACAACGTTACCCCCAT
CGCCCAAATCCTCGCCATCCGCGAACTGAACATCGGGCATTCGCTGATTGCCCAAGCCCT
CTTCCTCGGACTGCCCGAAGCCGTGCGCCAAATGAAGGAGGCGATGTTCAGGGCAAGGCT
GCTGGGGTAAGGGCAGGCAAACCCTTTCAGACAGCATTTCACGACAGGGATATGTTATAG
TGGATTAAATTTAAATCAGGACAAGGCGGCGAAGCCGCAGACAGTACAAATAGTACGGGA
AGGCAAGCCAACGCCGTACTGGTTTAAATTTAATTCACTATATGAATCAAAAGTATATTT
TATCTGCAAACAATAATAGTTTGATAGAAGAAATTCACAATACAGTACAGAGTATTGGGT
ATTGTATTGTTCGAGGTCTTAATCTAAACCATCTTGATGGCAGCCGGAGAAACAAGAAAT
TATTTGACTTTCTATCTCAATTAGGAATGCTGACAAACCACAAAGGCGATGGTTTTAAAT
CTATATTTTGGGATATTAAATATTGAGGCGATGATTATGTAATATAGTGGATTAACAAAA
ATCAGGACAAGGCGACGAAGGTGCAGACAGTACAGATAGTACGGAACCGATTGACTTGGT
GCTTCAGCACCTTAGAGAATGGTTGTCTTTGAGCTAAGGCGAGGCAACGCCGTACTGGTT
TTTGTTAATCCACTATAAATAATGATATAACTTTCTCGGAAGATGTTGGAGAATGTCCAC
TTCATAGTGATTCATCTTTTAGTGAAAACCCGGAAAGTTATTTGGTTATGTATGTAGTAA
AATCAGCCAATGATGGAGGTAATTCCCTATTTTTAAGTTCATCAGATATTGTCAATCAGT
TATCTAAAACAGAAACCGGTAAAAAACACTTAAAAACATTAACGGGCAATTTATATCCAT
TTAAAACAGCAGCATCATTTGATAAAAAACAAGGTGTGAGATGGGGTAATATCTTATCGG
TCAATACTGAAATGATTAGATTTAGAAGTGATTGTATCTATAAAGGTATTGAAGAAAATA
GAAATAAAGTATCAAAGGAAATGGTACTTGCACTTGATTATCTTATAAATGTTATAAAAA
ATGCGAGTGATATTCAAGAATTTTCTGCACAAGATGATGGTTTGATTATTATTGACAATG
TCAATGGCTTGCATGCCAGAACTGATTATACGGATAAAAACAGGCATTATATTAGAGCAA
GAATTACTGTATAAAGGACGGTTATGCAAGAAATAATGCAATCTATCGTTTTTGTTGGTG
CCGCAATACTGCACGGAATTACAGGGATGGGATTTCCGATGCTCGGTACAACGGCATTGG
GTTTTATCATGCCATTGTCTAAGGTTGTTGCCTTGGTGGCATTACCAAGCCTGTTAATGA
GCTTGTTGGTTCTATGCAGCAATAACAAAAAGGGTTTTTGGCAAGAGATTGTTTATTATT
TAAAAACCTATAAATTGCTTGCTATCGGCAGCGTCGTTGGCAGCATTTTGGGGGTGAAGT
TGCTTTTGATACTTCCAGTGTCTTGGCTGCTTTTACTGATGGCAATCATTACATTGTATT
ATTCTGTCAATGGTATTTTAAATGTATGTGCAAAAGCAAAAAATATTCAAGTAGTTGCCA
ATAATAAGAATATGGTTCTTTTTGGGTTTTTGGCAGGCATCATCGGCGGTTCAACCAATG
GCATGTCTCCCATATTGTTAATATTTTTGCTTAGCGAAACAGAAAATAAAAATCGTATCG
TAAAATCAAGCAATGTATGCTATCTTTTGGCGAAAATTGTTCAAATATATATGCTAAGAG
ACCAGTATTGGTTATTAAATAAGAGTGAATACGGTTTAATATTTTTACTGTCCGTATTGT
CTGTTATTGGATTGTATGTTGGAATTCGGTTAAGGACTAAGATTAGCCCAAATTTTTTTA
AAATGTTAATTTTTATTGTTTTATTGGTATTGGCTCTGAAAATCGGGCATTCGGGTTTAA
TCAAACTTTAATTGATTATTAAATGCCTTAACTCCTTATTAAATAATTGGCACGATGTTT
TAGAATTTCAAATGGAAAAGGTTAGAGTGAAAATTGTTACCGACAAAACCCCAAAAGTGG
ATATTCACGCCATTTTAACGCCCCAAGAAATTGACGGCATTCATCATCACATTCATCACT
ACCCGCAACCAAGGGCGAAGGAGCGCAAATATGATTTACGGCATCGGCACAGACATTGTT
TCCCTCAAGCGCATCATCCGCTTAAACAAAAAATTCGGACAGGCGTTTGCCGGGCGCATC
CTCACTCCGGAAGAGCTGCTTGAATTTCCGCAAGCGGGCAAACCCGTCAACTACCTCGCC
AAACGCTTTGCCGGGAAAGAAGCCTTTGGCAAAGCCGTCGGCACGGGCATAGGCGGCGCG
GTTTCCTTCCGCAAGATCGGCATCGGGCATGACGCATTGGGCAAGCGCGAATTTTTGTAC
GGCCCCGCGCTGTCCAAATGGCTGGAGGAACAAGGCATCAGCCGCGTCAGCGTCAGCATG
AGCGACGAAGAAGACACCGTATTGGCGTTTGTCGTTGCCGAAAAATAATGCCGTCTGAAA
TGCGGCAAACCCGTTGACGGCATTGCCCGTCCCTCATTTGCACTCCGACCGACCAACCGC
GTACCCGCCATGATTCAAGACACCCGACCCCTTATCCGCGTCGTTGCCGGCATCCTGCTC
GATTCAGACGGCAACTACCTGCTCAGCTCGCGCCCCGAAGGCAAACCCTATGCCGGATAT
TGGGAATTTGCCGGCGGCAAGGTGGAAGCGGGCGAAACCGACTTCCAAGCCCTGCAACGC
GAGTTTGAAGAAGAACTCGGGATGCGCATCCTCGCCGCCACGCCTTGGTTGACCAAAATC
CATTCCTACGAACACGCCCGCGTCTGCCTGAAATTCCTATGGGTCAACCCCGACCAATGG
ACGGGCAAACCGCAATCCCGCGAAGGGCAGGAATGGTCTTGGCAGAAGGCGGGTGATTTT
ACCGTTGCCCCCATGCTGCCCGCCAACGGCGCGCTTTTGCGTTCGCTGTCCGTCCCGCGC
CGTTTGTACGGCAGCCTGAAAACGGGTTTGCACGGAGAAAACAGTATGGGCGCGTACCGC
GTCCTGCCTTTGGGTTCGGCAGAGGGAAGCGGTGCGAACGTTTTGATGGAGGCGGCGCAA
TGGCAGGACAGACCCGAACAGGCGGACAGCGTGTGGATGGTGGTGCAGACCCGCGAACAA
TGGCGGCGGGCGCAGGAAAAGGGCGCGGATGCGGTCGTTTGGCGCGTGTGCGATGATGTT
CAGGCACAAGAGGCGGCAGAAGCCCTGCGGCAGGGCGTATCCGTGCCGCTCGTACTTGCA
GCAAACGGACAGACGGTTGCACGTTATGGAAAACTATGGCTCGGATTGGGGGCGCACGTG
GTGGTAAGGGATGAAACAATAGGGAAGAATCATGAATAAAAACCGTAAATTACTGCTTGC
CGCACTGCTGCTGATTGCCTTTGCCGCCGTCAAGCTCGTTTTGTTGCAATGGTGGCAGGC
GCAGCAGCCGCAAGCTGTGGGGGCGCAATGCGATTTGACCGAGGGTTGCACGCTGCGGGA
CGGAAGCCGCGTCCGCGCCGCCGCCGTTTCAACCAAAAAACCGTTTGATATTTATATCGA
ACACGCGCCCGCCGGCACGGAACAGGTCAGCATCAGCTTCAGTATGAAAAATATGGATAT
GGGTTTCAACCGCTATATGTTCGAGCGGCAACCGTCGGGGACTTGGCAGGCAGTACGCAT
CCGCCTGCCCATCTGTGTCGAAGGCAGGCGCGATTTTACGGCGGACATTACAATCGGCAG
TCGGACATTTCAGACGGCATTTACCGCCGAATAAACCTTTCAATCCGCCATTGCCGGAAC
ATCCGTCCGGAAAGGACACGTTATGAATACTTTATATACACTTTTCGCCACCTGCCCGCG
CGGCTTGGAGACCGTTTTATCTCAAGAACTCGAAAGCCTCGGCTGTACCGATGTACAAGT
GTTTGACGGCGGCGTTTCCTGCCGGGGCGGATTGGAACAGGTTTACGCCGCCAACCTGCA
TTCGCGTACTGCCAGCCGTATCCTGCTGCGCCTGACCAAAGGGACATACCGCAATGAGCG
CGACATCTACAAACTCGCCAAAAATATCAACTGGTTTAATTGGTTTACTTTACAGCAGAC

GTTCAAAGTCAAAGTCGAGGCAAAGCGTGCCAACGTTAAGAGCATCCAATTTGTCGGACT
GACCGTCAAAGATGCCGTCTGCGACGCTTTCCGCGACATTTACCACGCACGTCCGAGCGT
GGACAAAGCCGCGCCCGATGTCCGCATCCACGCCTTTTTGAACGAACGCAATGTCGAAAT
CTTTATTGACACTTCGGGCGAAGCCCTGTTCAAACGCGGCTACCGCCTGGATACCGGCGA
AGCCCCGCTGCGCGAAAACCTTGCCGCCGGACTGCTGCTCTCGGCAGGCTACGACGGCAC
GCAGCCGTTTCAAGACCCGTTTTGCGGCAGCGGCACGATTGCTATCGAAGCCGCTTGGAT
TGCCGCCCGCCGCGCGCCGGGTATGATGCGCCGTTTCGGTTTTGAAAAACTGCAAAATTT
CGATAAAACGCTGTGGTCGGATTTGCGGCGCCGCGCCGAAGCGCAAACCCGCCCCGTCCG
CGCCCCGATTGCAGGCAGCGACAACGACCGCCGCATCGTTCAGACGGCATTGGACAACGC
ACGCCGCGCCGGGGTGGACGACATCGTTTCCTTCAGCGTTGCCGACGCGCAGTCCGTCCG
ACCGAACGGCGAAAACGGCATTATGGTGTCCAATCCGCCCTACGGCGTGCGCCTTGAGGA
AGTCCGCGCCTTGCAGGCACTGTATCCGCAGTTGGGGACGTGGTTGAAAAAACATTACGC
AGGCTGGTTGGCGGCAATGTTTACCGGCGATAGGGAAATGCCCAAATTCATGTGCCTGTC
GCCCAAGCGGAAAATCCCGCTTTATAACGGCAACATCGACTGCCGCCTGTTCCTGATTGA
TATGGTGGAAGGATCGAACCGTTGAGGAAAGTGTACAAAAATGCCGTCTGAAAAATGTTC
AGACGGCATTTATTTTTCGGAATCAACCCCGCTTCAATACGGATGTATTGATGTAGCGTT
GGACACCCGAGGCAATGGATTGGGCGCACTGCCGGCGGAAGGATTCGCTGCCCAGCAGCT
TCTCTTCGGCAGGATTGGACAGGAAGGCGCTTTCGACCAGGATAGACGGCATATCGGGTG
CGCGCAAAACGGCGAAATTGGCTTCGTCCACCCTGCCTTTGTGCAGATGGTTGAGCCTGC
CCAATTCTTCAAGCACCAGTTTGCCGAGTTTGCGGCTGTCGCGCAGCGTGGCGGTTTGGG
TCATGTCGAGCAGGGCGGTATCGACATTGCGGTTGCCGCTGGTCGGTACGCCGCCGACCG
CGTCGGCATTGTTTTGCGTCTGTTCCAAGAATTTGGCGGCAGAGCTGGTTGCGCCTTTGG
TGTTTAACATATAAACCCCCGTGCCGCGCGCGGAGGGGCTGGTGAAGGCATCGGCGTGGA
TGGAGACAAATACGTCCGCCCGCCGTGCTCGCCCTTTGGCGACACGCACGCCCAATGGGA
TGAACACGTCTTCGTTGCGCGTCATAAATACATTGTAACCTAATGCTTCCAACTGATTTT
TGGTTTCCCTGGCAATGGATAGGACGACATGTTTTTCCTGTAGACCGCCCGGGCTGATGG
CGCCGGGGTCTTCACCGCCGTGTCCCGGATCGAGCATGATGACGGGTCTGCGCCCGTTTC
TGCCGCGCCCGGGTTGGGGCGTGGTGTTTTGGGCGAGGTCGGCTTCGGGAGAGCCGCGCA
GGGTTTTATTCAGGCTACCGTTGAGCAGTGCCATCATCGGATCGTCGGCATCCATCCCGT
GCGGATAGAGGTCGACGACGAGGCGGTTCTTAAAGCCGCCGACGGGCGGAAGCGCGAAGA
CTTGTGCGTGGGTGGGCTGTTTCAAATCGATGACGAGGCGGACGGTGGTCGGCGTGTTCT
GACCCGCGCGTATGCTGCGGATAAAGGGGTCGTCTGCCATGACTTTCTGAGACAGTCCGT
GCAATACGGTATTGATGTTCGCGTTTTGTATGTCGACGACCAGCCTGCCCGGGTTGTCGA
GCGTGAAGTGCTGGTATTTGAGCGCGGCGGTGCTTTCCAGCGTCAGGCGGGTGTAGGTGT
GCGACGGCCATATCCGTGCGGCGGTGAATTGCGGGGCGCGTACCGTTTTGGCAACGGCGG
ATGCGATGGGGCTTAGGGCGAACAGTGTGCCGGCGGTGCGGCGGATGATTTGTCTTCGTG
TCAGTTTGATCATAGCGGCAGGCTTTCGCGTCCTCGTTCGGTATGGGCGGTCAGCAGGCA
TTTTCTGCCGTCGCCGTCGTGTGTCAATGTTGCGGTGATGTCGGCGGGCGGCGTAAATTC
CCCGCCCTGTTGCGGCCATTCGATCAGGCAGACGCTGTTTGCGGCAAACAGTTCGTCAAG
CCCCGCGTCTTCCCATTCTTCGGGGAACGAGAAGCGGTAGAGGTCGAAATGGTGCAGGGT
GAAGCGTTCCAGCGGATAAGATTCGACGATGGCGTAGGTCGGACTTTTGACTGCGCCCTG
ATGACCCAATCCGCGCAGGATGCCGCGTGTCAGCGTGGTTTTGCCCGCACCCAAATCCCC
TTCGAGATAAATGACCAGCGGTGCGTTTAAACGGGAAGACCACGCCGCGCCCAAATCGAG
TGTGGCGGCTTCGTCGGCAAGGAATCGGGAGATAGAGGGTAAATCAGACATGGAAACGGT
TTGTTGTAAGGTCTAGGGTATTATGGGCAGTTTTGCAGGTTTTGCAAACTTTGCACCCGA
GGGGCGGATGCTTCTTGTCCGAGCATTATAACAGCCAAATCCGCGTTCTGCTTTCAGACG
GCAACGGCTGTCAAGAAAAAGCGGCGCGTGTACAATACGCGGATTGTATGTTTAGGACGG
ATTGGAAAAAGAATGGAAAATATCGGCAGGCAGCGACCCATCGGCGTTTTTGACTCGGGA
ATCGGCGGTTTGACCAATGTGCGAGCGCTGATGGAACGGCTGCCGATGGAGAACATCATT
TATTTCGGCGACACGGCGCGCGTGCCTTACGGGACGAAATCTAAGGCGACCATCGAAAAT
TTCTCGATGCAGATTGTCGATTTTTTATTGGAACACGATGTCAAGGCGATGGTTATCGCG
TGCAATACGATTGCGGCGGTGGCGGGGCAGAAAATCCGTCAAAAAACCGGCAATATGCCC
GTTTTGGACGTGATTTCCGCCGGCGCGAAAGCCGCGCTGGCAACGACGCGCAACAATAAA
ATCGGCATTATCGCCACCAATACGACAGTCAACAGCAATGCTTATGCGCGCGCCATCCAT
AGGAACAACCCCGACACGCTCGTCCGCACGCAGGCCGCGCCGCTGCTCGTCCCTTTGGTG
GAAGAGGGCTGGCTGGAACACGAAGTTACCCGCCTGACCGTATGCGAATACCTCAAACCA
TTGCTTGCAGACGGCATCGATACGCTGGTGTTGGGCTGCACGCACTTTCCCTTGCTCAAG
CCCTTAATCGGCAGGGAGGCGGGCAATGTCGCGTTGGTTGATTCTGCAATTACAACGGCC
GAAGAAACCGCACGCGTCCTTGCTCAGGAAGGATTGCTCAATACCGACAACAACAATCCC
GACTACCGTTTTTACGTCAGCGATATTCCTTTGAAATTCAGAACCATCGGCGAGCGTTTT
CTGGGCAGGACGATGGAGCAGATTGAAATGGTGTCTTTGGGTTAAAACGATGACGGAAAG
CTGCCCGAGATTACAGAAACCTAAAATCCCGTCATTCCCACGAAAGTGGGAATCTAGACC
TGTCGGTGCGGAAACTTATCGGATAAAACGGTTTCTTTAGATTTTACGTTCTAGATTCCC
ACTTTCGTGGGAATGACGGGATTAGAGTTTCAAAATTTATTCTAAATAGCTGAAGCTCAA
CGCACTGGATTCCCGCCTGCGCGGGAATGACGAATTTCAGGTTTCTGTTTTTGGTTTTCT
GTTTTTGTGAAAATAACGGGATTTCAGCTTGTGGGTATTTACCGGAAAAAACAGAAACCG
CTCCGCCGTCATTCCCGCGCAGGCGGGAATCTAGACATTCAATGCTAAGGCAATTTATCG
GGAATGACTGAAACTCAAAAAACTAGATTCCCACTTTCGTGGGAATGACGGAATGTAGGT
TCGTGGGAATGACGGGATGCAGGTTTCCGTATGGATGGATTCGTCATTCCCGAGCAGACG
GGATCTAGACATTCAATGCTAAGGCAATTTATCGGGAATGACTGAAACTCAAAAAACTAG
ATTCCCACTTTCGTGGGAATGACGGGATATAGGTTTCCATGCGGACGCGTTCGGATTCAC
GACTGCGCGGAAATGACGGGATTTTGGTGTATTCCCTAAAAAAATAAAAAAACATTTGCA
ACTTTGTTAAAAATAAAGGCTGTGTTTTAACGATGTGTTGATATTTAATTTTAGAAAGGT
AGCTATTTAATAGTTACCTTTTCTTATTTAAAAATAGCTTTCTCAAATTCCATGAACGCC
TCAATACGATATGCAGATGCTCTATCGAAATTAAGTTTCAACATTTTGTTTATTAAACAT